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# Gleanings in Bee Culture

VOL. XXXVII

SEPTEMBER 15, 1909

NO. 18



NORTH YARD, AS SEEN FROM THE ROAD AND THE ELECTRIC-CAR LINE.

PUBLISHED BY

THE A. I. ROOT COMPANY, MEDINA, OHIO, U. S. A.

# Ten Flower Post Cards **FREE**



This is the most beautiful set of souvenir post cards ever produced. Every card is a work of art. They are fitly named "Beauties of Friendship." The set consists of ten cards, each card bearing a different flower and a different expression of love and esteem. Each flower is reproduced in its natural colors and in a most lifelike manner. The gold background adds to the effect and causes the flowers to stand out from the cards in a realistic manner. Each card bears a different verse of sentiment suitable and appropriate for any time or person. While the supply lasts we want every reader who sees this offer to write us at once and we will mail them free a set of these wonderfully attractive cards.

**WHY THESE CARDS ARE FREE:** The purpose of this advertisement is not to sell you this set of post cards, but to get in touch with people who buy and appreciate post cards. We have a special proposition to make to all such people, and in order to find out who they are and where they are we make this **Special Offer:** If you will fill out and mail the coupon below, with three two-cent stamps to cover cost of clerical expense, postage and packing, we will send you absolutely free this set of ten (10) "Beauties of Friendship" post cards. We make no profit on this transaction, in fact we lose money unless you see fit to do the small favor we shall ask of you when we send you these cards, but as it will be something which will benefit you, we are willing to run the risk of losing money on this offer.

## **FREE: SPECIAL FREE OFFER FOR PROMPTNESS**

If you will answer this advertisement **at once**, we will in addition to sending you the above ten "Beauties of Friendship" post cards, also send you absolutely free and postpaid, a complete novelette entitled "The Touch of the Finger—a Typewriter Mystery."

It is a story you will sit up late to finish, it is so fascinating and interesting. It is one of the greatest stories ever written, and we defy anyone to solve the mystery before they reach the final chapters. Remember, we send you this novelette absolutely free as an incentive for you to **ANSWER THIS ADVERTISEMENT THE MINUTE YOU SEE IT.**



This complete Novelette will be sent absolutely free and postpaid to every person answering the advertisement promptly.

**LEONARD DARBYSHIRE, Inc.,**  
Dept. G. B. C. ROCHESTER, N. Y.

GENTLEMEN:

Send me at once the ten beautiful colored post cards "Beauties of Friendship" as advertised. Also, send me free, for my promptness in answering your ad., the novelette, entitled, "The Touch of the Finger." Also send me full particulars of the special offer you desire to make me. Enclosed find three two-cent stamps to cover postage, clerical help and packing of above.

Name \_\_\_\_\_  
Box, Street \_\_\_\_\_  
or R. F. D. No. \_\_\_\_\_

Town \_\_\_\_\_

County \_\_\_\_\_ State \_\_\_\_\_

**LEONARD DARBYSHIRE, INC., Dept. G B C., ROCHESTER, N. Y.,**



# ALEXANDER'S WRITINGS

## on PRACTICAL

# BEE CULTURE

**\$1.00**

With GLEANINGS ONE YEAR

**\$1.00**

The writings of the late E. W. Alexander, who needs no introduction to the readers of GLEANINGS, have recently been collected in book form. A glance at the table of contents will show the scope of the book. . . . .

### Table of Contents of the Alexander Book

Alexander Plan for Weak Colonies.  
 Bee-keeping as a Business.  
 Brood-rearing in Spring.  
 Comb v. Extracted Honey.  
 Diseases of Bees.  
 Disposing of the Honey Crop.  
 Extracting Uncapped Honey.  
 Feeding Back Extracted Honey.  
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 Hive-covers.  
 Hives, etc., to Adopt if Starting Anew.  
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 Ventilation of Bee-cellars.  
 Wintering.  
 Wintering in Cellar.

The  
 A. I. Root  
 Company,  
 Medina,  
 Ohio

For the en-  
 closed remit-  
 tance of \$1 please  
 send Gleanings to

Send the Alexander book to

Name \_\_\_\_\_

Address \_\_\_\_\_

If Gleanings is to be sent to same party  
 as book, sign only in last two blank lines.

**\$1 WITH GLEANINGS ONE YEAR \$1**

Canadian Postage 30c Extra

## Honey Markets

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent), cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

### EASTERN GRADING RULES FOR COMB HONEY.

**FANCY.**—All sections well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise, all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

**No. 1.**—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

**No. 1.**—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

**No. 2.**—Three-fourths of the total surface must be filled and sealed.

**No. 3.**—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

### NEW COMB-HONEY GRADING-RULES ADOPTED BY THE COLORADO STATE BEE-KEEPERS' ASSOCIATION.

**No. 1 WHITE.**—Sections to be well filled and evenly capped except the outside row, next to the wood; honey white or slightly amber, comb and cappings white, and not projecting beyond the wood; wood to be well cleaned; cases of separated honey to average 21 pounds net per case of 24 sections, no section in this grade to weigh less than 13½ ounces.

Cases of half-separated honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparated honey to average not less than 23 pounds net per case of 24 sections.

**No. 1 LIGHT AMBER.**—Sections to be well filled and evenly capped, except the outside row, next to the wood; honey white or light amber; comb and cappings from white to off color, but not dark; comb not projecting beyond the wood; wood to be well cleaned.

Cases of separated honey to average 21 pounds net per case of 24 sections; no section in this grade to weigh less than 13½ ounces.

Cases of half-separated honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparated honey to average not less than 23 pounds net per case of 24 sections.

**No. 2.**—This includes all white honey, and amber honey not included in the above grades; sections to be fairly well filled and capped, no more than 25 uncapped

cells, exclusive of outside row, permitted in this grade, wood to be well cleaned, no section in this grade to weigh less than 12 ounces.

Cases of separated honey to average not less than 19 pounds net.

Cases of half-separated honey to average not less than 20 pounds net per case of 24 sections.

Cases of unseparated honey to average not less than 21 pounds net per case of 24 sections.

**BOSTON.**—We quote fancy white comb honey, 16 to 17; No. 1 white comb honey, 15 to 16; fancy white extracted, 8 to 9; light amber, 7 to 8; amber, 6 to 7. Beeswax, 30. **BLAKE-LEE CO.**

August 23.

**INDIANAPOLIS.**—There is a good demand for best grades of honey, with market fairly well supplied. For fancy white comb honey producers are being paid 16 cents; for No. 1 white, 14; finest extracted in 5-gallon cans, 8. No demand for amber or off grades. Producers of beeswax are receiving 28 to 30 cents.

Sept. 2.

WALTER S. POWDER.

**DENVER.**—The quality of this season's crop is good, but the quantity is not more than half an average. Demand for carlots is good. We quote our local market, strictly No. 1 white, per case of 24 sections, \$3.30; No. 1 light amber, \$3.15; No. 2, \$3.00; white extracted, 7½ to 8½; light amber, 6½ to 7½. We pay 24 cts. per lb. for clean yellow beeswax delivered here.

**COLORADO HONEY-PRODUCERS' ASS'N.**

Aug. 28.

F. Rauchfuss, Manager.

**BUFFALO.**—There is now a better demand for honey than there has been, although it is not what it ought to be. Buyers are taking it sparingly. There are only small quantities of new arriving, and a good deal is being offered in the country. We quote No. 1 to fancy white comb, 14 to 15; No. 2 ditto, 11 to 13; No. 1 dark comb, 12 to 12½; No. 2 ditto, 10 to 11; white extracted, 7 to 8; dark ditto, 6½ to 7; tumbler, 90 cts. to \$1.00 per dozen. Beeswax, 27 to 30.

Sept. 8.

W. C. TOWNSEND.

**LIVERPOOL.**—The market is quiet at present, and there have been small sales of low price. Chillan at \$7.20 per 100 lbs. We quote nominal prices for other qualities as follows: Chillan, \$7.08 to \$7.32 per 100 lbs.; Peruvian, \$3.84 to \$4.80; California, \$9.12 to \$9.84; Jamaican, \$6.72 to \$7.92; Haitian, \$6.72 to \$7.80. Beeswax is steady. We quote African, \$30.84 to \$33.88; American, \$33.68 to \$35.48; West Indian, \$30.84 to \$35.08; Chillan, \$33.88 to \$39.92. **TAYLOR & CO.**

Liverpool, August 25.

**PHILADELPHIA.**—There has been considerable activity in the honey market in the last ten days. The uncertainty as to the amount of honey-dew in the local market has kept dealers guessing, and has caused considerable inquiry. There have been some few sales, but it is a little early for deliveries as yet. We quote fancy comb honey, 16 to 18 in small lots; light-amber comb honey, 13 to 14; fancy water-white extracted honey in 60-lb. cans, 7; amber, 6½; in barrels, 6. Beeswax is firm at 38. **WM. A. SELSER.**

August 25.

## SIMPLY DELICIOUS!

The finest car of Sage Honey that ever crossed the "Rockies" just arrived, and we are selling it like "hot cakes" in crates of two 60-lb. cans at 9½c per lb. Samples 10c.

If you want Honey that's truly delicious send for some to-day.

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51 WALNUT STREET

The Busy Bee-men

CINCINNATI, OHIO

# Extracted Honey Wanted

We are always in the  
market.

If you have any to sell, mail  
small average sample to

**NATIONAL  
BISCUIT COMPANY**

Purchasing Department

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CHICAGO, ILL.

## WE WILL BUY AND SELL HONEY

of the different grades and kinds

If you have any to dispose of, or if you  
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We are always in the market for WAX  
at highest market prices.

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**NEW YORK**

## 30 YEARS SELLING HONEY

Has given us a large out-  
let and many customers  
who depend on us for  
their supply of honey.  
Correspondence promptly  
answered : : :

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# HONEY! HONEY!!

If you are in want of extracted or comb honey, we will  
be pleased to quote you, as we have several cars of  
California honey in stock. Write to-day for prices and  
samples. : : : : : :

If you have any honey to offer, state kind it is, how  
it is put up, and lowest price you expect for same,  
delivered Cincinnati. : : : : :

## C. H. W. WEBER & CO.

2146-48 Central Ave., Cincinnati, Ohio



# GLEANINGS IN BEE CULTURE

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# HARDY BEES!

Bees of the Superior Stock, furnished by J. P. Moore, of Kentucky, are the best honey-gatherers that I ever owned. They are gentle—smoke is seldom necessary in handling them, and very little at that. Besides this, they are very hardy—seem to have more than the ordinary amount of vitality. We had a very striking example of this the second spring that we had bees in Northern Michigan. About half of our bees were of this strain, and the other half of several different strains. The Moore strain of bees were quiet all winter, consuming very little honey, and coming out in the spring fully as strong as they went in. Then, still further, they "stood up" during the trying weather that followed after they were set out of the cellar. When colonies of other strains were dwindling away and succumbing to the cold, these bees held their own; and when the harvest opened up the last of June they certainly were far ahead of all the other bees we had in the North. They were treated the same the previous

fall, kept in the same cellars, protected and fed the same in the spring, but they came out ahead. It was simply in the *breed of the bees*.

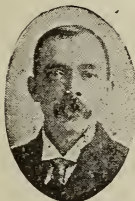
We brought 100 queens of Mr. Moore this year to use in making increase. It was not that we did not have just as good stock in our own yards, but we could buy them cheaper than we could rear them.

Now is the time to buy queens and have them introduced and all ready to breed from next spring. I can furnish queens of this strain (they will be sent out by Mr. Moore) at \$1.00 each, or I will send the Review for 1909 and 1910 and one of these queens for only \$1.50. Mr. Moore has 700 nuclei, and will fill orders by return mail. Send me \$1.50, and I'll at once forward your order to Mr. Moore, send you the back numbers of the REVIEW for this year, and then keep on sending it to you to the end of next year.

W. Z. HUTCHINSON, Flint, Mich.

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### THE SECRET OF SUCCESSFUL POULTRY-RAISING FOUND AT LAST



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**ALWAYS FULL  
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DOES IT**

### SUCCESS WITH POULTRY ABSOLUTELY GUARANTEED BY THE USE OF BRIGGS SYSTEM AND SECRETS

**Feed for growing chicks and making eggs at 15c per bushel explained by the Briggs System.**  
No machinery; no cooking.

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**Endorsed by hundreds of leading successful poultrymen—Hundreds of unqualified testimonials in our possession.**

### "PROFITS IN POULTRY-KEEPING SOLVED"

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### THE SECRET OF TURKEY-RAISING IS ALSO BARED

This book has never been sold for less than \$5.00 per copy, and thousands covering several editions are being followed by an equal number of successful poultry-raisers.

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While the present edition of the Briggs System and Secret Books lasts.

IF YOU WILL REMIT US \$1.25, WE WILL SEND IMMEDIATELY A COPY OF BRIGGS WONDERFUL SYSTEM BOOK, viz.: PROFITS IN POULTRY CULTURE SOLVED, also a set of BRIGGS "SECRETS IN POULTRY CULTURE," and include also POULTRY SUCCESS one year. Even if you already have a copy of "Profits in Poultry Keeping Solved," you are losing money every day by not having the supplemental publication, "Secrets in Poultry Culture." POULTRY SUCCESS is admittedly the world's leading and best POULTRY JOURNAL, 20 years old, 86 to 164 pages, beautifully illustrated and printed. Most competent and experienced writers in the country, 50c a year. It is the 20th-Century Poultry Magazine. Sample and circular FREE. Address

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Wholesale Dealers and Commission Merchants in

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# Special Prices Root's Bee-supplies

**W**E ARE overstocked on some articles, and the rush of business being practically over with, we have decided to make special prices on the following list of goods, f. o. b. San Antonio. When ordering supers and hives you should order in lots of 5 and 10 or multiples thereof; sections, 500 or multiples; frames, 100 or multiples; shipping-cases, 50 or multiples. These are first-class goods made by The A. I. Root Co., but most of them have been in stock all the season and longer. We are giving designations just as given in Root's Catalog. If you have none write us for one, or write us for any other information.

## Frames

9500 Shallow Frames, 4 1/2-inch end-bars each . . . . .	\$1.25 per 100
1900 Thick-top Staple-spaced Frames, P W, each . . . . .	1.95 per 100
1500 Shallow All-wood Frs. for I super, 1/2-in. top-bars, PW, . . . . .	1.25 per 100
2400 Shallow All-wood Frames for I super, 1/2-in. top-bars, . . . . .	1.25 per 100

## Hives, Covers, and Bottom-boards

Covers must be ordered in lots of 50 or multiples.

40 Danz. AE5-10 at 85c each. . . . .	300 8-10 at 38c each.
500 AE 5-10 PWKD at \$1.05 each. . . . .	300 A-10 at 18c each.
500 5-10 PWKD at 60c each . . . . .	150 B-10 at 26c each.
250 G-10 at 26c each. . . . .	100 A-8 at 17c each.
	100 B-8 at 25c each.

The above prices are good only until the above number of goods are sold, and only when this advertisement is mentioned. Remittance must accompany each order. Order quick before they are all gone.

## Supers, Packed five in each package

330 2P-10 at 33c each. . . . .	175 2S-8 at 29c each.
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135 2I-10 at 33c each. . . . .	200 2P-8 at 29c each.
115 2S-10 at 33c each. . . . .	80 J5-8 at —c each.

## Sections---B grade, plain, packed 500 in a package

13,000 4x5x1 3/8 at \$2.85 per 1000 . . . . . 3500 at 3 5/8x5x1 1/2 at \$2.85 per 1000  
We also wish to sell 4000 4x5x1 3/8 No. 1 plain sections at \$3.85.

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500 12-inch, 4-row, 3 and 2 inch glass . . . . .	at \$12.50 per 100
350 10-inch, 4-row, 2-inch glass . . . . .	at 11.50 per 100
200 12-inch, 2-row, 2-inch glass . . . . .	at 7.40 per 100
200 16-inch, 2-row, 2-inch glass . . . . .	at 8.25 per 100
250 8-inch, 3-row, 2-inch glass . . . . .	at 7.50 per 100
350 6 1/4-inch, 3-row, 2 and 3 inch glass . . . . .	at 7.50 per 100
550 7 1/4-inch, 4-row, 3-inch glass . . . . .	at 7.50 per 100
250 7 1/4-inch, 3-row, 3-inch glass . . . . .	at 7.50 per 100
300 9 1/4-inch, 4-row, 3-inch glass . . . . .	at 10.50 per 100
50 9 1/4-inch, 3-row, 3-inch glass . . . . .	at 10.00 per 100

If you can use any of the cases in the foregoing, list with prices is good in lots of 50 or multiples thereof, as they are put in packages of 50.

**Toepperwein & Mayfield**  
1322 South Flores St. San Antonio, Texas



WITH A FULL LINE OF

## Bee-keepers' Supplies

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### Mr. Bee-Man:

You can save time, worry, and money by ordering your supplies for next season now.

I have a full line of Hives, Supers, Sections, Foundation—in fact, every thing you need in the apiary. If you do not have a catalog, send for one to-day.

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### The Best Comb-honey Combination

I have 112 colonies all in Danz. hives with the exception of ten, which are in Danz. divisible hives, and these will go into the regular Danz. body in the spring. The regular Danz. body, with the right management, is the best combination in the world for comb honey. I let the big-hive men laugh, but when we go to market, their product is no competition to mine. The dealers say to them, "If yours is as good as Hall's bring it in and we will take it." And it is all in the form and management of the HIVE.

St. Joseph, Mich., Sept. 26, 1908.

C. L. HALL.

You can get the same results by using the Danzenbaker hive. Nothing to equal it for the production of comb honey. The booklet "Facts about Bees" tells all about this hive. Sent to any address on receipt of ten cents.

Write for quotations on the Danz. hives for your apiary.

**The A. I. Root Company, Medina, Ohio, U. S. A.**

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Please use this order form by checking in the margin the items wanted

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- ☐ **My First Season's Experience with the Honey-bee.** By the "Spectator," of the *Outlook*, of New York. A ten-page leaflet detailing the experiences of this well-known writer. You will read the leaflet through before you lay it down. Free.
- ☐ **The Bee-keeper and Fruit-grower.** A 15-page booklet giving actual facts regarding the value of bees to fruit, and showing how bee-keeping may be doubly profitable to the fruit-grower. Fruit-growers are realizing as never before the necessity of having honey-bees in close proximity to their blossoming fruit. Free.
- ☐ **Bee-keeping for Sedentary Folk.** A 24-page leaflet reciting the actual experiences of an amateur bee-keeper, showing what equipment is best, points derived, etc. Free.
- ☐ **Catalog of Bee-keepers' Supplies.** Our complete catalog will be mailed free to any address on request.
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- ☐ **How to Keep Bees.** A book of 228 pages, detailing in a most interesting manner the experiences of a beginner in such a way as to help other beginners. Price \$1.10 postpaid.
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## AS THE ADVERTISING DEPARTMENT SEES IT

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Very frequently, especially during the past year or two, we are in receipt of inquiries from subscribers and customers regarding the suitability of certain localities for bee-keeping, or requesting that we suggest some locality especially well adapted for bees. Now, we are often unable to give any very definite information regarding the locality mentioned, and we hesitate to recommend any certain locality, even though we know that it is a good bee country, because we know little or nothing of its other resources.

With the new lands now being opened up in the middle West and Northwest, there are some excellent opportunities for settlers, and it appears to us that any one desiring to make a change of location would do well to look for some of these new lands rather than to take up a residence in a country which has been settled for many years and which has few new possibilities.



Being somewhat interested in this north country, our Chicago manager decided to take a vacation trip to the Bitter Root Valley in Montana. Mr. Boyden was accompanied by Mr. Geo. W. Dial, who is a representative of the real-estate company which is exploiting this Bitter Root Valley Co. Mr. Dial is well known to us, and their impressions of this new country are rather interesting.

They found that bee-keeping has been greatly neglected in that section. The settlers seem to have been so busy with other matters that they haven't given much attention to their bees; and the result is that this industry has never been developed, and, consequently, there are many very good opportunities for bee-keeping in the valley. The winters are mild, and the temperature so uniform that bees require almost no winter protection, and winter losses are very rare. There is a source of honey from the middle of March until late in October, and white clover is in blossom from about the 10th of June until the middle of September, and is very abundant. With ordinary care a bee-keeper could produce extra-fancy white-clover honey in large quantities.

Alfalfa is grown extensively, and is the source of large honey-yields. Sweet clover is found in great abundance, and is one of the chief sources of honey. The large amount of fruit grown in the valley affords ample nectar for building up colonies in the spring, and there is such a large flow from apple-blossoms that there ought to be considerable surplus from this source.



The present home market for honey just about equals the present supply of comb, and there is almost no developed market for extracted honey. Neither grade is advertised, nor has any effort been made to stimulate its sale in the valley. By a little careful advertising, a steady demand for extracted could be established, and comb honey could be sold for a great deal more than it is now bringing in that market. Immediately adjacent to the home market in the valley are the mining regions of Montana and Idaho. Every large producer of honey will realize the immense advantage of this market. Shippers to eastern markets could easily compete with the more distant producing sections of California, Utah, and Colorado.



## AS THE ADVERTISING DEPARTMENT SEES IT

Bee-keeping is not the only opportunity offered by this land, however. Fruit-growing is its main attraction. The quality of the soil is such that it has made possible the production of especially fine stocks of apples, crab apples, cherries, pears, plums, and prunes. Small fruits are also grown in quantities for shipment, and all kinds of garden truck grow splendidly. Hay and grains yield heavily. Poultry-raising is very profitable, either on a large or small scale.



As a place for a home the valley offers some ideal conditions. The weather is all that can be desired. The roads are good, and railroads running into the valley offer easy means of transportation. There are excellent schools, and the scenery is as grand as any to be found in this country. There is plenty of game of all kinds, and the mountain streams and rivers abound in fish.

From our observation it would appear that this valley offers an unusual opportunity to a home-seeker who is interested in bee-keeping, fruit-growing, gardening, poultry-raising, etc.; and we suggest that any one seeking a new location would do well to look into the offers made for this land.



While we recommend careful maturing of plans before going to any new locality, we believe the opportunities offered in various parts of the country, especially newly developed irrigated districts and the land offered by the industrial departments of the railroads, which are promoting hitherto undeveloped regions, are worthy of the earnest thought of many young men and those families with a number of young boys whose bent is towards agriculture and its related branches, such as fruit-growing, bee-keeping, poultry-raising. In recent years much has been written in the East regarding the tendency of the boys and young men to leave the farms for the cities. Many families who are not favorably located in the East, and who do not wish to see the boys go to the city, might find a solution of the problem in the above suggestion.



The railroads going into these newly opened up lands are usually well supplied with information regarding them, and an inquiry addressed to the industrial department of any of the large western or southern roads will bring a wealth of interesting printed matter regarding the territory through which the road runs. If you are undecided about the land, or do not wish to make a move without some more personal knowledge of the country, you may make a trip to the section without much expense. Railroads are constantly running excursions into these new lands, and by taking advantage of these you can get information first hand and see for yourself what actual conditions are. Of course, to any one well established these opportunities are not especially attractive; but to the ambitious man who wants a good home and a certain independence, it appears that they are worthy of consideration.

**"If Goods are wanted Quick, Send to Pouder."**

**Established 1889**

## It's "JOHNNY ON THE SPOT" That Counts

**By the Bee Crank**



A Yankee lad at a Vermont summer resort offered an Indianapolis clubman a fine string of speckled trout for fifteen cents. "My lad," said he, "in Indianapolis you could get six or seven dollars for that catch." "Yes," replied the boy, "and if I had a basket of snowballs in purgatory I could get fifty dollars apiece for them."

Which is merely another way of saying that a perfectly satisfactory delivery service is as necessary as desirable goods. And this in turn is merely preliminary to reminding bee-men again that in Root's goods at factory prices with Pouder service you have a perfect combination. Best goods, quick delivery, and lowest prices.

Knowing that to the bee-man even a trifling delay often means a great loss, I keep my warehouse filled with standard goods ready to ship at a moment's notice.

Pouder-service patrons also have another advantage in the fact that I am located in the greatest inland railroad center in the world, with bee-line roads radiating to all parts of the country. You frequently have your goods before another house could possibly have received the order.

Let me send my catalog. It is free. Or you can make up your order from the Root catalog if you prefer, our prices being identical.

**BEEWAX.**—I am now paying 28 cents cash or 30 cents in trade. I can use more wax.

**HONEY.**—While honey is not generally plentiful I have been fortunate in securing the finest and largest stock that I have ever had on hand at one time before. Bee-keepers as well as merchants are good buyers this year; and if you have particular patrons who require finest quality—the kind that brings them back with the remark that they would like more like the last lot—I can supply you. Write for prices.

**Root's  
Goods  
at  
Root's  
Prices  
with  
Pouder  
Service**

### **Walter S. Pouder, Indianapolis, Indiana**

**859 Massachusetts Avenue**

# GLEANINGS IN BEE CULTURE

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## EDITORIAL

By E. R. ROOT.

WE are conducting some quite elaborate experiments in feeding back to fill out the combs. At first the results were not very satisfactory. The indications are much more favorable now, and a little later on we will give our readers the result of these trials.

### NEW CORRUGATED-PAPER SHIPPING-CASES.

It is about time now that we begin to get reports from those who have tested the new shipping-cases. Commission men and honey-buyers generally ought by this time to know something of the relative merits of the wooden and paper cases; and producers also will begin to get reports from the buyers.

### A GOOD TENEMENT WINTER HIVE.

ATTENTION is drawn to the Bartlett tenement hive, illustrated and described in this issue by Mr. E. D. Townsend. If we may judge on the principle that the "proof of the pudding is in the eating," then the Bartlett tenement or quadruple hive must be a good one. Those who have no cellars, and who live in cold climates, would do well to adopt something of this sort.

### HONEY-CROP CONDITIONS.

THERE is not much new to add to what we have already given in these columns about the honey situation for 1909. There is more evidence to show that the eastern crop of clear clover and basswood, that is, honey free from honey-dew, will be very light. The scarcity of eastern honey, however, will be largely made up by western alfalfa and California mountain sage. It is our opinion, however, that the market for first-class honey should be firm, and prices should be somewhat in advance over what they were a year ago.

### OUTDOOR FEEDING VS. ARTIFICIAL PASTURAGE.

SOME three or four years ago we practiced considerable outdoor feeding, the purpose of which was to stimulate brood-rearing, during the off season of the year, to fill up the hives for winter and to prevent robbers from interfering with the various manipulations in queen-rearing.

While this accomplished its purpose admirably in all of these respects, we think there is a better way. We are now working a scheme of artificial pasturage; that is to say, we are furnishing (as before stated in these columns) buckwheat and alsike free and at half price, depending upon the distance from our yards; and it is a noticeable fact that, during the last year or so, our bees are not nearly so much inclined to rob during July and August as they formerly were. At our south yard we have over 20 acres of buckwheat within range of the bees. At the north yard we have quite a quantity of alsike. The farmers have been putting this in, to a considerable extent, in the vicinity of all our yards. The last few years red clover failed to do well, and the price for seed has been exorbitant; and when they could get alsike-clover seed at half price, or furnished free if the field was near one of the apiaries, it is not at all strange that they should put in large acreages of it.

This giving-away of seed has certainly saved us considerable in sugar; the bees are much quieter than they used to be, and the queens reared are of a higher quality. Any queen-breeder knows that he can not get first-class stock when the bees are inclined to rob whenever a hive is opened.

### THE FOLLY OF MIXED GRADING.

IN this issue, in Mr. J. E. Crane's department of Siftings he speaks of the very important matter of putting each grade of honey by itself. In other words, he advises grading honestly. While we believe that bee-keepers are as high a class as any people in the world, yet it is nevertheless a fact that a few, either through ignorance or motives of, shall we say, dishonesty, mix some No. 2 with their No. 1 honey; and, worse yet, put the choicest and best of their No. 1 in front of the glass, and the poorer sections in the rear. There is nothing in the world that will "queer" a producer in the mind of a buyer more than this. He is rated as dishonest at once; and if the buyer has not paid for the goods he will cut the whole shipment down one or two cents a pound. In other words, he is almost compelled to put the grade no higher than the poorest sections in each case or regrade the whole lot. If our producer had in the first place done this work properly, so there would be nothing



but No. 1 in cases so marked, and the No. 2 in the other, he would get back far larger returns, and, what is more, make it possible for all the rest of his honey to move off at the same or even a better figure.

This question of grading is not only a matter of common honesty, but one that involves getting the highest price possible for the product. We know of certain parties who, careless in their gradings of the first shipment, will never be able to get as good a price as some other fellow who has always been careful in that respect.

#### FEEDING THICK OR THIN SYRUP FOR WINTER FOOD.

In this issue, in his usual department, p. 436, Mr. G. M. Doolittle gives advice on feeding—when and how to feed, and how to make the syrup. We particularly endorse his advice to make a *thick* syrup, two parts of sugar to one of water. When the syrup is made thick, in this way, it is necessary to put in something to prevent crystallization. A small amount of vinegar is often employed, but honey is better.

Perhaps some of our old readers will wonder why we endorse the giving of a thick syrup when we have for the last few years recommended equal parts of sugar and water. The evidence has been slowly accumulating, showing that the last-mentioned proportion entails too large an amount of work on the part of the bees, wearing them out prematurely, leaving them in a worked-out or rundown condition, so that they are not as well able to stand the rigors of winter. While we have to acknowledge that a thick syrup will not be ripened by the bees, that is, "inverted," in the language of the chemist, yet it is nevertheless a fact that a thick syrup, even when inverted to only a very limited extent, brings the bees through the winter in a good condition; indeed, some of our older readers used to say that they preferred sugar syrup to the best honey that was ever produced.

Where one desires to feed to stimulate brood-rearing in the spring, or any other time of the year, a syrup of equal parts of water and sugar is preferable, of course; and when feeding back to finish out sections, the honey must be made thinner still, or of about the consistency of raw nectar. We say *honey*, because no honest bee-keeper would ever think of feeding sugar syrup to fill out sections. While the product would be perfectly wholesome, it would not be honey, and could not, of course, be sold as such, without incurring the severe penalties of the pure-food law, both State and national.

#### THE SHAKE-OUT METHOD OF INTRODUCING QUEENS.

OUR Mr. Mell Pritchard, who has charge of our north yard, that will turn out nearly two thousand five hundred queens in a little over three months, reports that he has been having excellent results in introducing to

refractory colonies by shaking the motherless bees all off the combs in front of the entrance and dropping the queen to be introduced among them as they rush for the hive. The bees for the time being are demoralized, and in their stampede to get into the hive they pay no attention to the queen, which, in the general scramble, acquires the colony odor of the bees.

Mr. Pritchard says he has introduced a large number of queens in this way without the loss of one. Some colonies he used for cell-building, keeping them queenless for practically a month. Such bees are quite disinclined to accept a queen introduced in an ordinary cage by what is known as the candy plan, the bees eating out the candy through a hole in one end of the cage, and releasing her. After having a number of failures with such colonies he practiced the shake-out plan, and in every case the bees accepted the queen just as if she had always been in the hive.

As we have before pointed out in these columns, shaking bees, when properly done, puts them into a state of demoralization for the time being, and while in that condition *the colony spirit is broken*. When bees are shaken out in front of the entrance of the hive, as Mr. Pritchard explains, the one and only idea seems to be to get back into the hive. Whether they think they have swarmed or what, we do not know. He further says that there are no guards at the entrance of the hive to attack the new queen-mother as she comes in with the general procession. After they get in, it takes some little time before they can readjust themselves and get down to business. In the meantime, *the bodily contact of the queen with the bees and the brood gives her the same colony odor as the rest of the bees*.

This idea may not be new, but at all events it is worth trying, and we suggest that some of our readers report results, especially with certain refractory colonies that seem disposed to kill a queen introduced in the orthodox fashion.

As this will be the season for uniting, we might suggest that this plan of shaking might be a good one to practice when putting two lots of bees together. Simply shake one frame of a colony, and then another frame from another colony to be united, and so on in alternation, until all the bees are in one bunch. The general shake-up ought to take all the fight out of them, and might induce the moved lot to stay better in their new quarters.

#### RED-CLOVER AND LONG-TONGUE BEES.

SEVERAL years ago we owned what we thought was a remarkable queen, as her bees were particularly active on red clover when it was in bloom. Indeed, they would fill their hives with honey at a time when the other bees were doing nothing. Examination showed that the tongue-reach of these bees was considerably greater than the average of Italians.

Mr. J. W. Southwood, in the *Bee-keepers' Review* for August, writes that, when this discussion about red-clover bees came up, he gave it only a passing thought; but queen-breeders, he says, were not slow in taking up the idea, and so they began to rear and advertise queens that would produce bees with long tongues that would gather honey from red clover. At first he was somewhat skeptical, believing it was nothing more nor less than a scheme to sell queens. At this point we will let him tell his own story:

But not being entirely faithless, after several years I purchased one of these queens. Last fall, 1907, I requeened a number of colonies from that queen, and last season I was delighted in seeing my bees working on red clover, and that, too, so plentifully that on first hearing them I thought it was a swarm passing over.

Lest some may think we are putting this in to advertise a strain of our own bees or queens, we will say that our old original red-clover queen died some years ago. We have no strain of the original stock, nor any stock that shows any remarkable qualities when red clover is in bloom, and therefore we have not advertised any red-clover stock for about two years back.

The question may arise right here as to why we did not develop that strain the same as stock-raisers develop some valuable traits in some individual out of the flock. For the simple reason that we were unable to control the drone parentage. Until bee-keepers can discover some reliable plan for inbreeding sister with brother of some particular strain of bees it is practically impossible to go beyond one or two generations. Nature has put up a big barrier against making any radical change in our bees; but we publish this item right here because it illustrates that bees, like every other stock, will "sport;" i. e., develop some desirable trait that is far more potent than in the average stock. If we could perpetuate that superiority by controlling the male parentage we should have a stock much superior to any thing we now have.

The report of Mr. Southwood as given above is only an isolated case. At the time we were furnishing red-clover stock we could produce a good many more just like it. Indeed, we have them on file yet.

#### WOOD SPLINTS FOR STAYING FOUNDATION; PUTTING WIRE IN FOUNDATION AT THE FACTORY.

In this issue, page 429, our old correspondent, Mr. J. A. Green, has furnished an excellent article on wood splints. We endorse all he says regarding the different methods of wiring and the objections to the horizontal wires, and the need of some sort of vertical stays that will prevent ordinary light brood foundation from stretching so that the queen avoids the elongated cells, or, worse yet, lays drone eggs in them.

Mr. Green suggests that it would be desirable to have splints made of some tougher material, which the bees would be less inclined to gnaw. This will doubtless be hard

to find unless some one can grow a sort of broomcorn that will give us strands of equal size and yet compete in price with those made of wood.

From all the evidence gathered this year, it would seem that, for the average bee-keeper at least, the wood splints should be a little shorter than the inside depth of the frame. Bees are inclined to commence gnawing at the bottom, as Mr. Green says, in order to provide passageways under the combs; and when they once start the job of gnawing they keep it up. There has been quite a little testimony to show that the shorter splints are not molested.

The ideal arrangement is small vertical iron wires, say No. 36, or, better, No. 40, imbedded in the foundation while it is being milled at the factory; but there seems to be no feasible plan as yet for accomplishing this and doing it cheaply. It is our opinion, however, that No. 40 size could be used, providing the foundation comes through the mill the wide way instead of the narrow way. Ordinary foundation passes through the rolls lengthwise—that is to say, the rolls are only a trifle longer than the width of the foundation. In order to incorporate the wires in the sheet successfully, the rolls should be as long as the standard Langstroth frame, and strands of wire the right distance apart run through the mill with the foundation. If a sheet of wax were passed through the wide way, and chopped off so that it would be just the right depth for a Langstroth frame, it would then be possible to feed in the wires at the time of milling the foundation; but so far no feasible plan of cutting the wires and also the foundation at the same time has yet been presented.

But then there is another problem that is different to solve. From a mechanical point of view, the narrower a sheet is milled, the more perfect the product. It is doubtful if foundation 17 or 18 inches wide, when it passes through the mill, would be anywhere near the equal of the product that now comes through only 8½ inches wide. It is well known that, in order to get a good thin or extra thin foundation, the sheets must pass through very short rolls, or just wide enough to give a sheet to fill out the inside depth of the standard sections. Now, then, if we should attempt to roll brood foundation the other way to, so it would be 18 inches wide, we would increase our difficulty of milling very materially.

The average bee-keeper, perhaps, has not considered this problem as it confronts the foundation-maker. We have had the thing in our mind's eye for a number of years back; but taking every thing into consideration, the Dr. Miller foundation-splints perhaps offer the best solution against the stretching of foundation while it is being drawn out by the bees in the hive.

In the meantime we should be pleased to get further reports from those who have used the splints, especially telling how far they have been satisfactory and to what extent they have failed.



# STRAY STRAWS

BY DR. C. C. MILLER

LOUIS SCHOLL, speaking of keeping the queen down, p. 491, says he gives extra supers *underneath* the first. E. D. Townsend says he keeps the queen down by adding the empty super *above*. Which is better?

BEE PASTURAGE changes. When I began, dandelion was not worth considering; now it is more important than fruit bloom. Then I had no fall flow to speak of; now it is of value. Heartsease is getting to be quite plentiful.

THANKS, A. I. Root, for encouraging family prayers, p. 416. You say a man with family prayers prospers better. Woman too. One of my pleasant memories is of eating at Adam Grimm's table when Mrs. Grimm asked the blessing.

J. A. RYE, let me further reply to your question, page 546. A queen *just hatched* is the easiest of all queens to introduce, and will be accepted in *any* colony without caging, but will be killed when older if a satisfactory queen is present. If not too long on the way she might be received young enough by mail to be accepted. In Europe they mail eggs.

REFERRING to p. 513, Mr. Editor, you may say positively that bees do carry dead larvæ of black brood out of the hive. Perhaps not when it gets too bad. [We saw no reason why they could not; but in the case of rosy foul brood of the old-fashioned type it would be almost impossible, for the reason that the dead larva in a badly decomposed state melts down into a mass of nasty sticky glue.—ED.]

DR. G. BOHRER, *American Bee Journal*, 472, departs from the orthodox *shaking* of foul-broody bees on to starters, and says *brush*. He's right. Shaking out honey makes the bees fill their sacs fuller, and then it takes longer to get it used up. [Yes; and shaking when honey is coming in fresh from the fields is quite sure to scatter such thin honey with disease germs all over the clothes, ground, and hives. While bees will not rob during this time, if there is a sudden stoppage they might get enough of this virus gathered up over the ground to spread the disease.—ED.]

L. S. CRAWSHAW says, *British B. J.*, p. 237, that, "however slow the process, the cell must reduce in size" by the constant addition of cocoons, and thinks he has read of bees reared in such reduced cradles at Medina that were amusingly small. Friend Crawshaw, if I remember, A. I. Root told about those dwarfs being reared in cells diminished by the bending of the comb. You forget that the constant addition of cocoons is compensated by the constant lengthening of the cells. New comb is about  $\frac{3}{8}$  inch thick. I have had old combs an inch thick, caused by the constant lengthening of the cells. The midrib was  $\frac{1}{4}$  inch thick.

J. E. CRANE, p. 492, says he finds it "unsafe to leave a hive during swarming time for ten days, as the bees will rear and hatch a young queen in less time, and may swarm out with her." In this locality, if I destroy all eggs and larvæ in queen-cells, I am absolutely sure that no young queen will emerge under fifteen days if the old queen remains in the hive. If I kill the old queen it is an exceedingly rare thing that a young queen emerges under twelve days; and if not held in the cell she's a very soft thing when she emerges, not fit to go with a swarm till considerably older. Who will tell us how much older?

INSTEAD of raising hives on four blocks to give ventilation, as mentioned, p. 505, I now prefer a two-inch entrance and two-inch space under bottom-bars, with a skeleton bottom-rack to prevent building down. I don't know that it's any better than raising on blocks, but it's ever so much easier. [Granted that it is easier, are you sure it gives as good results? We doubt it. Suppose, for example, that it is 90 in the shade, and there is a slight breeze. Suppose, again, that during the time you are in a sort of bungalow, one story, with windows on each of four sides. If you opened all the windows on one side and closed those on the three other sides, you would not get as much ventilation as if you opened one window on each of the four sides. In other words, the same number of square inches of opening on one side would not give by any means as good ventilation as if that same area were distributed equally on all four sides. What is true of a dwelling would also be true of a hive.—ED.]

BEE TRYING carbon disulphide for wormy combs. It's great. Sulphur does well for the younger fry, but it's difficult for it to kill an old fellow an inch long, well protected by its silken web. I had some bad cases. In all there were 328 combs. I piled them up in hive-bodies, six stories high, puttied up the cracks with a batter of flour and water too thick to run, spread batter on the top edge, and set a teacup on top. I also puttied a hive-cover on to an empty hive-body, ready to cover over. I then poured the cup half full of the disulphide (about six tablespoonfuls), and quickly covered up. Some twenty hours later I examined. I had purposely put some of the worst cases in the bottom story, and also in the top story. The miscreants were all dead, dead, in both stories, and I don't suppose the chance was good for any in the stories between.

I used Mercks carbon disulphide, which is said to be the best. A pound can costs 25 cents at the drugstore. The work was done in the house cellar, and there was no odor in the room above. Indeed, no odor could be detected in the cellar an hour after several piles had been dosed. But there was a good job of puttying. Of course, I was careful not to breathe directly over the teacup, and there was no chance for an explosion from light or fire.



## BEE-KEEPING IN THE SOUTHWEST

BY LOUIS SCHOLL, NEW BRAUNFELS, TEX.

### THE TEXAS STATE FAIR.

The Texas State Fair will be held at Dallas, October 16 to 31; and since this is one of the biggest fairs of its kind, it behooves every reader to know about its bee and honey department. Over \$350 is offered in premiums for honey, bees, and miscellaneous products. It is the best place for producers to advertise their goods; and whether any premiums are won or not, every bee-keeper who has any thing to offer should enter it. The writer is the superintendent of the apiarian department, and he would be glad to hear from all those interested regarding the space, exhibits, etc. Write at once and help to make this the largest bee, honey, and apiarian products show that has ever been in the South.



### THE VACUUM HONEY-EXTRACTOR.

Texas has a machine that will suck the honey out of the hives and run it into receptacles ready for shipping, page 463, Aug. 1. Whether this plan will prove satisfactory enough to replace the present methods of producing extracted honey, remains to be seen. The idea is yet in its infancy. Specially equipped supers are required with frames of much different construction, all of which looks expensive. The inventor, Mr. Avant, claims much for his machine, however. The writer has been in close touch with him and his invention for several years, and is watching developments closely, so that he will be able to say more about the practicability of such machines in a later issue.



### LOCATING OUT-APIARIES.

Since the writer now has twenty apiaries under his direct care, several letters have come in asking how far apart the yards should be, how many colonies should be kept in a yard, and also what is the object of so many apiaries.

It depends upon the locality and other conditions as to how far apart the apiaries should be. When the territory is made up of greatly varying localities, some being suitable for large apiaries while others are not adapted for bee-keeping at all, it is difficult to state in any definite way how many colonies a given place will support; also how far apart the yards should be located. In such a case the bee-keeper must find out for himself the answer to such questions. I would study the honey-yielding resources first, then place a small apiary in such location as I deem suitable, and, later, place other apiaries in spots not already occupied. Later it will be

found that a larger number of colonies can be profitably located in some of the places, while the original number or even a smaller number of colonies must be left at other yards.

On the other hand, if we start an apiary where the same conditions prevail for miles around, the solution of the problem is quite different. We will take, for instance, the country in our part of Texas, where apiaries of 100 colonies each may be placed every five miles. Experience taught me years ago, however, during my seventeen years of close observation, that bees do not fly nearly as far for honey as many bee-keepers suppose. I used to believe that bees gathered honey profitably up to three miles; but that when they went beyond, it did not pay. Inquisitiveness sent me on dozens of trips of adventure, which resulted in my finding that the most of my honey was gathered within two miles of the apiaries, and more often much nearer even than that, the bees very seldom going beyond the two-mile line. They almost never went very far for stores, and then only in cases of great necessity, or for some good reason. Even in extreme cases it was more often that the bees of an apiary would starve before going to fields of nectar three or five miles away—yes, even two miles or less.

This discussion really belongs under the heading of "How Far do Bees Fly to Gather Honey?" but still it has a great deal to do with the locating of apiaries and the placing of a proper number of colonies in the various yards. I have for years been an advocate of smaller apiaries and a larger number of them. The result is better when we work smaller yards, and we have a greater return in surplus honey. If bees do not gather honey so far away, why is it not better to place fifty colonies in yards two and a half or three miles apart, than one hundred colonies every five miles? It certainly would give the bees a better chance, and the ground would be covered more evenly and worked more thoroughly than in the other case. With the large yards further apart, it must be admitted that many bees waste time foraging over the same ground that others have already visited several times near home, while other bees must go much further to reach the nectar-yielding fields not yet overworked. By having the smaller apiaries closer together, our average year after year is greater than that of the other fellows who have the larger yards further apart.

Local showers of rain have a great bearing on our honey yields. Very often the bees in a certain apiary will pile in honey where recent showers have fallen, while others three miles away are doing but little. The bee-keeper who has his yards scattered far and wide will be sure to get some honey somewhere, while if he has his bees all in one yard he will get very little or none at all in a poor season. The bees in large apiaries are generally the first to starve, while those in the smaller apiaries usually manage to scrape up a living.

## SIFTINGS.

BY J. E. CRANE, MIDDLEBURY, VT.

Say! that illustration, p 342, June 1, of the work of the lesser wax-moth, is just perfect. I thought at first I could see some of those little pink larvæ; but I guess I was mistaken. If those little scamps would only have the good sense to die in severely cold weather, like the larger moths, we should have little fear of them; but they haven't.

How often I find single articles in GLEANINGS that are well worth (yes, many times over) the price of it for a year! These were my thoughts as I looked over that carefully written and illustrated article on foul brood and black brood by E. R. Root, p. 340, June 1. Who can tell how much might be saved to the country if all those bee-keepers who think they can not afford a bee-journal could read this article and gain an intelligent idea of these diseases?

I enjoy those pictures of apiaries from different parts of the world. The difference in hives and surroundings is often very striking. In northern yards we almost always find the proprietor at work, while in the one on the cover, June 1, showing the tropical climate of Colombia, all the persons that appear are sitting in the shade taking it easy. In the pictures on pages 368 and 369, illustrating bee-keeping in Holland, we are reminded of the old straw hives of our childhood, and somehow they look good too. Few better hives for summer or winter than those old straw skeps.

That interview between the editor and Mr. Segelken, page 327, is of a good deal of interest—especially at this season, when we are busy packing and shipping honey; and I wish especially to call attention to the packing of honey—or, rather, to grading it. Bee-keepers of much experience know that they can rarely have all fancy or No. 1 honey to ship, and they should know that it never adds to the value of No. 2 honey to put it with their best grade, but will, rather, lessen the value of No. 1. So, put all the best in one grade, and that which is off quality in No. 2. Our New England dealers don't like more than two grades; but I sometimes have to make another of mixed honey that is white and dark in the same section. Some dealers are willing to buy such honey for a slightly lower price; but it is better to have it where it can be sold by itself. While but a small amount of dark honey can be sold in our eastern markets (east of New York), yet we occasionally have calls for just such honey.

A few words to those who use paper shipping-cases. Be sure there is a single-faced corrugated mat in the bottom with unfaced side up. Be sure, also, that there is a space of about  $\frac{1}{4}$  or  $\frac{3}{8}$  inch above the sections when

in place—viz., between the tops of the sections and the tops of the partitions. Last, but not least, be sure the case is so labeled or marked on top that all who handle it will know what it contains, and that it must be handled carefully.

Perhaps paper shipping-cases had better not be shipped by express, or the results may prove as disastrous as those reported on p. 359, June 15. The fact is, these cases are not constructed to withstand throwing from an express wagon to a city pavement. Mr. Segelken offers some objections to this case. Let me say that we have had, I believe, several hundred wood cases lined with this corrugated paper, and with partitions, but found them unnecessarily expensive, and, so far as we have been able to observe, no better if as good as cases all paper.

Another objection Mr. Segelken offers is that it takes a lot of cord to tie them, which makes them more difficult to open and close than wooden cases with nailed covers. This may be a valid objection, although we have never had any one who has used them make it. We are, however, this year using paper stickers to fasten cases together to test them, and such can be opened and closed even quicker than a wooden box where nails are used.

"Somehow the appearance of the glass corrugated shipping-cases does not strike us favorably," says the editor, page 468, Aug. 1. Same here; and yet why? I do not expect to use such, and I hope it will not be necessary for others to do so, for I consider glass a nuisance from first to last. Its only value is in showing off honey when on sale, or for letting freight-handlers know what they are handling. To obviate the last difficulty I believe a bright-colored paper neatly printed and pasted on top of wooden cases will prove quite as satisfactory and much cheaper; while for corrugated-paper cases, some such paper label seems indispensable, and we never ship out a paper case without it. There has been some difference of opinion as to the necessity of using wooden carriers where paper cases are used. While we have not found it necessary here in New England to do so, it may be better for those who are accustomed to using carriers with wooden cases to continue using with paper cases until the ability of such cases to stand rough usage has been more fully tested. I do not myself know just how much they will stand; but the fact that those dealing in honey greatly prefer them and are willing to pay more for honey put up in them, shows very conclusively that there is a marked difference in their favor.

We have had a good deal of trouble in getting them made as they should be. This has been so difficult that a few days ago I took a long journey to visit a manufacturer, and explain just what we wanted, and why, and made arrangements to have them packed so as to have them reach in good shape the bee-keepers who order them.



## CONVERSATIONS WITH DOOLITTLE

AT BORODINO, NEW YORK.

### WHEN AND HOW TO FEED FOR WINTER STORES.

"When must I begin getting the bees ready for winter? A day or two ago an old bee-keeper told me that the time to prepare for winter was in September."

"I quite agree with the old bee-keeper, that, if we want our bees to do the very best possible in the spring, we must have ample autumn preparation."

"But my bees have not enough honey for winter; and you would not feed for winter now, would you, when there is a chance that the bees may yet get some more honey from the fields?"

"I think that the most of us are apt to put off this feeding business as long as possible in the hope that some favorable spell of honey weather will bless us by helping the bees to fill up their combs with natural stores for winter. But this I consider unwise. Some advise feeding slowly in August till there are stores enough for winter; but I think it better to wait till September 8th to 12th, or not later than the middle of that month, in any event, to do this feeding."

"Would you feed slowly in September?"

"No. I would feed as rapidly as possible."

"Why not feed slowly at this time as well as earlier in the season?"

"Because rapid feeding insures a high temperature in the hive, and this high temperature insures the sealing of the stores for winter, which in turn insures a dry atmosphere inside of the hive during winter, no matter how cold or how much dampness there is about the hive. And all of this tends toward successful wintering, and the successful wintering insures good strong colonies in time for the white-clover harvest. Slow feeding, on the other hand, and especially with thin feed, means a waste all along the line. There is a waste of energy in evaporating or boiling down the feed, and this in turn means a waste (or shortening) of the life of the bees, without giving a high temperature inside of the hive. Much of the stores is unsealed, and this unsealed honey takes on moisture from every damp spell during the winter. Such a thinning of stores tends toward diarrhea, and many bees will die of old age before warm weather comes in the spring. The whole result is a loss through poor wintering, which means dead or depopulated colonies when the harvest from white clover comes."

"How shall I make the feed for winter?"

"After experimenting much, and trying all of the formulas I found in print for making feed for bees for winter stores, I now consider *this* the very cream of the whole: Put 15 lbs. of water into a suitable-sized vessel, setting it over the fire until it boils, and then slowly stir in 30 lbs. of granulated sugar, this stirring being done so the sugar will dissolve instead of going to the bottom

and burning, as is quite apt to be the case if the 30 lbs. were poured in at once. After stirring till the sugar is dissolved, leave over the fire until the whole boils two or three minutes. After this, take it from the fire and stir in 5 lbs. of extracted honey. This makes 50 lbs. of the very best feed."

"What is the extracted honey put in for?"

"To avoid the crystallization of the syrup, as is often the case where it is made as thick as this and fed rapidly. With thin syrup and slow feeding the bees so manipulate it that there is no trouble along this line; but thick feed in cool weather will crystallize more or less unless something is added. Many formulas call for acids of different kinds; but the honey answers all purposes, and makes a food more eagerly taken."

"Does it make any difference as to the kind or quality of honey used?"

"Not that I can detect, for this great bulk of boiling hot feed thickens and purifies any honey which may be stirred in. I should not want to use honey which I knew came from colonies having the genuine foul brood. However, in curing my whole apiary of this disease in the '70's, I fed hundreds of pounds of it which was not heated to a greater degree than here given, without a single colony showing the disease again. I know that it is now thought that foul-broody honey must be boiled a long time to make it safe for feeding; but that painstaking pioneer bee-keeper, Moses Quinby, fed and used hundreds if not thousands of pounds of it, the same as I did, with equally good results."

"But what shall I do with my small colonies—feed them the same as the rest? I have some twenty or more quite small colonies from second and third swarms"

"I do not think it will pay you to winter these separately. I would unite them."

"When should this be done?"

"Before feeding, always. And I would unite all colonies of which I had any doubts about their coming through in good order."

"Why should I have any doubts about any but the weaker ones I have told you about?"

"Colonies which have old or otherwise unsatisfactory queens should be placed in this list, as well as colonies which, from any reason, were without queens during the latter part of the summer for several weeks. These are likely to have an insufficient number of young bees to come out strong in the spring, and it does not pay to feed any except those you are quite sure will go through in good order."

"If, after uniting all my small and doubtful colonies, I still have more than I care to winter, would it be best to unite?"

"In such a case I would look over all my medium-sized colonies; and such as had half enough stores I would unite by alternating half of the combs of each having the most honey in them in one hive, and shaking the bees from each alternate comb down in front of these united frames of honey. Then, if I thought they did not have all the stores they needed to make sure of their coming out strong in the spring, I would feed."



# GENERAL CORRESPONDENCE

## SPLINTS FOR FOUNDATION.

### How May We Improve Them?

BY J. A. GREEN.

The use of wooden splints for strengthening full sheets of foundation, as advised by Dr. Miller, has evidently gone beyond the experimental stage and taken its place as a recognized and valuable improvement in bee-keeping practice. The old plan of vertical wiring undoubtedly gave more perfect combs than the horizontal wiring which had almost entirely supplanted it. The horizontal wiring was adopted principally because of the general adoption of the thick top-bar, which could not be as readily pierced for the vertical wires. Another (though perhaps less important) reason was that the wires on the top and bottom of the frame interfered somewhat with scraping them and keeping them free from brace or burr combs. The plan of running the wires through hooks or staples on the inside of the frames has some serious disadvantages, and has not proven satisfactory in practice. Especially has this been the case when the wires were run across the frame diagonally, as in what was known as the "Keeney" plan.

The main fault with the horizontal wiring is that it does not prevent the sagging of the foundation. This is so generally recognized that little attempt is made to avoid this. In the directions for wiring generally given in books and catalogs we are told to leave the wires slack to allow for the inevitable sagging.

Any system that permits of any amount of sagging is defective, and in practice is both unsatisfactory and expensive. This is because, in a sheet of comb built on foundation which has sagged in being drawn out, the cells of the upper part of the comb are so elongated and deformed that they are seldom used for brood-rearing unless it may be for drone brood. This is bad enough, but it is almost worse when they remain perpetually filled with honey during the honey-flow. When this is the case, not only is the capacity of the brood-nest decreased but the space between the brood-nest and the super is increased, and this space is filled with what is perhaps the worst substance that could be put there when the subject of work in the supers is considered. That is, I believe that this strip of honey between the brood and the supers has a very marked effect in discouraging the bees from beginning work in the super or from doing their best work afterward.

This brings us back to the subject of splints, as what appears to be the most practical substitute for the old vertical wiring in securing combs free from elongated cells near the top-bar—combs which the queen

will fill with brood up to the very next row of cells to the top-bar, utilizing the full capacity of the brood-nest and putting the brood where it will give the greatest possible stimulus to super work.

They appear to answer the purpose very satisfactorily but for one thing—namely, the tendency of the bees to take them as a foreign substance to be gotten rid of. Undeniably, this tendency of the bees to gnaw them is a very serious objection to their use, and we must try in some way to prevent it. Waxing the splints will not entirely prevent it, yet waxing appears to be indispensable. The gnawing generally begins at the lower end of the splint and continues upward. In their efforts to get rid of the splint, the bees gnaw away the foundation on each side of the splint, sometimes making a grievous ruin of what would otherwise have been a fine comb. We can help matters somewhat by using splints that are shorter than the distance between top and bottom bar, and not letting them come within  $\frac{3}{4}$  inch or so of the bottom-bar. This is because the bees often insist on having a bee-space between the bottom of the comb and the bottom-bar of the frame. If the splints extend into this space they are almost certain to begin to gnaw them, and they are quite likely to continue upward instead of covering them with comb. Once they are built into the comb they are not likely to be disturbed.

It may be that it will be best to follow Dr. Miller's plan of a bottom-bar in two parts, with the bottom edge of the foundation between them. This is more likely to result in a comb built down to the bottom-bar, and in that way it reduces to that extent the danger of the bees beginning to gnaw the splints. Waxing the sheet of foundation to the bottom-bar answers the same purpose, and is preferable in some respects. Some one has proposed that the splint be longer than the distance between the top and bottom-bars, the ends fitting into grooves in these. I have not tried such splints; but aside from the fact that they would be much more difficult to put into place, I can not believe that they would be much less subject to gnawing than the ordinary style.

It has also been proposed that we cover the splints with melted wax or with narrow strips of foundation. While either of these would undoubtedly help matters they would add considerably to the labor of preparing frames, to say nothing of the extra wax required.

Perhaps the most feasible solution of the problem will be to find a splint that the bees can not or will not be inclined to gnaw.

Can we readily get fine wire in straight pieces of the length required, or will it be more practical to roll the wire into the foundation as it is made? Remember, we want vertical wires. I do not believe we want flat-bottomed foundation, though it might be practical to have one row of flat-bottomed cells at the place where the wire would come. Our makers of foundation-mills would have to answer this question. A wired founda-

tion with the top fastened with either wax or wedges, and the bottom fastened by a divided bar or wax, might prove more satisfactory than what has been used.

Another way out of the difficulty would be to make our splints of some smooth hard-surfaced stems of grass or other vegetable growth that the bees would not be as likely to gnaw as they would a sawed splint. Broom-corn has been suggested for this purpose. The Japanese use in their matting and other manufactures a variety of grasses or stems that might prove to be just what we want if they can be readily procured.

This article may not seem to you very satisfactory or conclusive. I have tried to make it suggestive. I feel sure that we need some-

## WINTER CASES IN THE FAR NORTH.

**How Bees are Wintered Year after Year Without Loss in a Locality where they are Confined to the Hives Nearly Five Months.**

BY E. D. TOWNSEND.

At the extreme northern end of the southern peninsula of Michigan, at East Jordan, lives one of the most careful and successful of bee-keepers—one who has won renown for beginning with but one colony, when he was but fifteen or sixteen years old, and, by painstaking care and successful wintering, increasing this one colony in six years to one

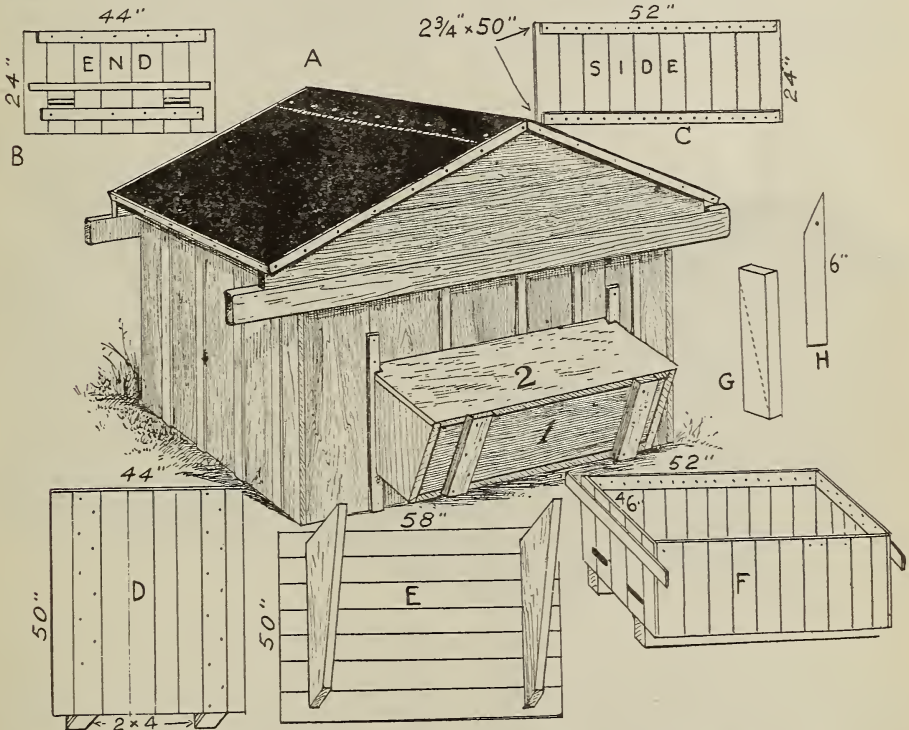


FIG. 1.—BARTLETT'S WINTER CASE FOR HOLDING FOUR TEN-FRAME COLONIES.

thing better than the plan of horizontal wiring. The splint method seems to be the most satisfactory substitute, but it is not without its drawbacks. How can we best improve it?

I have not tried the plan of using a splint only two inches or so long, using them only in the upper part of the sheet of foundation; but this would undoubtedly prevent much of the trouble, while securing most of the advantages of the full-length splint.

I used, along with the full-length splints, quite a number that were somewhat shorter, having been broken; and I do not think I have ever seen such a splint gnawed.

Grand Junction, Col.

hundred colonies without the loss of a single one during any of the winters; and, besides all this, harvesting an average of 100 lbs. of honey per colony each year. Mr. Ira D. Bartlett, of whom I write, insists upon having good strong colonies in the fall, for he winters out of doors in hives packed warmly in planer-shavings and sawdust.

The orthodox method of wintering bees in this northern part of the country is in a cellar, in trenches dug in the sand, etc. I propose in this article to tell something of the methods of wintering bees in packing-cases out of doors. The various bee-keepers following this plan, including Mr. Bartlett, Mr. Floyd Palmer, of Paris, Mich., and Mr. A. H.



Guernsey, of Ionia, Mich., when asked to tell what percentage of loss they have in the winter, reply by saying that they never lose good colonies during winter, although they admit that they, like other bee-keepers, occasionally have colonies that for some reason or other are not in good condition in the fall, and that these make up their only loss.

Mr. Bartlett has elaborated a winter case for holding four ten-frame hives, which, in my judgment, is superior to all the others, although it retains the main principles of all good cases. The illustrations show this case so plainly that but little description is necessary; but in referring to the dimensions of the case, Mr. Bartlett has the following to say:

The sides are 24 inches high and 52 inches long, the ends being, of course, the same height, and 44 inches long. The bottom is 44 inches wide and 50 inches long, nailed to two 2x4's, 50 inches long, these latter forming the stand for the case. The cover extends down

and then puts in the packing material just as I do; that is, he puts the paper above the cloths, and he has very good success.

I use hemlock lumber, for which I pay \$16.00 per 1000 feet. I believe that matched lumber would be better in every way, as I am obliged to lath over the cracks, as I make them now. Either planed and matched lumber or block siding put on horizontally would be preferable to this plan of boarding up and down. There is about 90 feet of lumber in one of these cases, which, at \$16.00 per 1000, will amount to about \$1.44. There is also 22½ feet of roofing at \$1.85 per square, so that the total amount for the material is \$1.90. I had the cases made at a factory for less than I could have made them by hand. I should put the total cost of one of these cases, which holds four ten-frame colonies, at from \$2.50 to \$3.00.

I do not think that 4 or 6 inches of packing over the top of a colony is sufficient when the temperature gets down to 30 below zero. I want enough packing so there will be no condensation of moisture under the quilt as the result of the warm air coming in contact with a cold cover. With ten inches of packing over the bees I have had very little if any trouble from this cause. If the case is tight and the packing material dry, I would not hesitate in saying that 10 inches is sufficient; but more than 2 inches is needed in front. I believe that 3 inches in front of the hives in my loca-

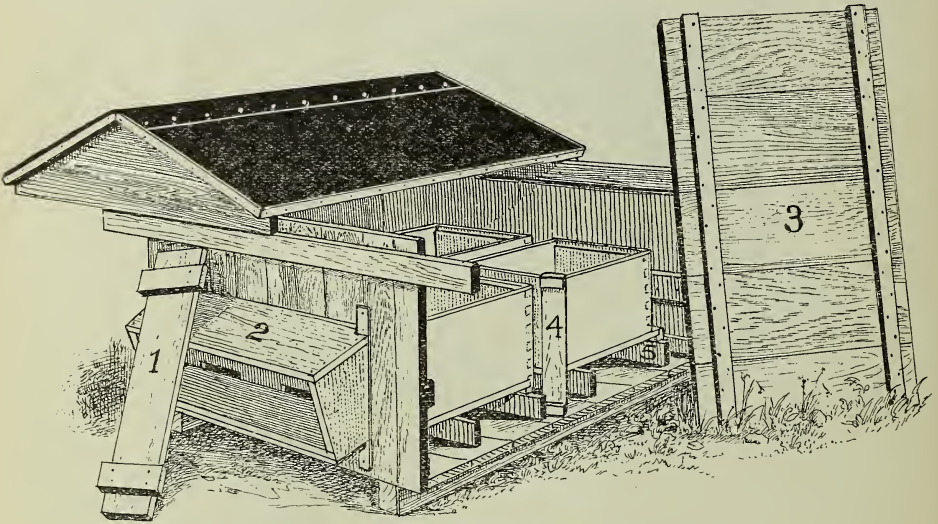


FIG. 2.—BARTLETT'S WINTER CASE, SHOWING INTERIOR.

over the sides of the case 5 inches, and 2½ inches over the ends. The four supports for the hives, as shown at No. 5, Fig. 2, are 40 inches long, 3 inches wide, and 1 inch thick.

No. 4, Fig. 1, shows the bridge standing on end, which forms the passageway from the entrance of the hive to the opening in the outside case, which opening is ½x6 inches. The distance between the entrance of the hive and this opening in the case is 4 inches, which is the proper thickness for the packing material to be used in front of the hives.

No. 2, Fig. 1, shows the vestibule entrance of the winter case. The board shown by No. 1 fits into this vestibule entrance and closes it during the winter. It is not put on until after the bees are through flying in the fall, and it must be removed in the spring, or, for that matter, at any time when the bees need to fly.

There is 3 inches of packing material under the hives, 6 inches at the sides, 4 inches in front, 10 inches over the tops. The material which I use is dry planer-shavings and fine sawdust.

When I prepare my colonies for winter I remove the covers of the hives and place cloths over the tops of the frames, first putting some pieces of lath across for a passageway for the bees during the winter. When possible I put several thicknesses of cloth over the frames, allowing the edges to hang down over the side of the hive before the packing is put in. One of my neighbors puts newspapers over the hives

tion is a very safe amount; but 4 inches is better. In the spring, after brood-rearing has started in good shape, I find that in most cases the brood is nearer the side of the hive adjoining the next colony. I keep snow banked in front of the cases, which helps to keep the fronts warm; and, besides, the bees are more often clustered near the back ends of the hives than they are in the fronts.

In a location where there are occasional warm days during winter, the vestibule entrances will require some attention; but in our location the bees are confined to the hives nearly five months. I pack the colonies about the last of September, and leave them in the cases in the spring as long as the bees will stay quiet, or until they begin to hang out, showing that they are abundantly able to take care of themselves.

It is of importance to know that East Jordan is in a lumber location, and it is easy to secure planer shavings and sawdust, while it would be almost impossible to get any kind of chaff in sufficient quantities. On the other hand, the majority of bee-keepers could get chaff much more conveniently than they could sawdust and shavings.

Mr. Guernsey and Mr. Palmer, who are



just as successful as Mr. Bartlett, use chaff for packing material. I am convinced, therefore, that there is not much difference in results whether wheat, oat, or clover chaff, or planer-shavings and sawdust are used. At one time, I myself wintered 300 colonies in chaff-packed hives and winter-cases. At that time I prepared the hives for winter as early in October as convenient, and they were left with the winter protection until about the 20th of May, or until the freezing nights were over. Some of the very light-est colonies were left until June.

Mr. Bartlett says further:

For a good many years after I began keeping bees I wintered nearly every colony that was in any shape to winter, and averaged 100 lbs. per colony. I attribute a great deal to the fact that I wintered my bees at home, where I could give them close attention all the time. I banked snow over them when it was very cold, and contracted the entrances in the spring and fall as the bees required.

I made 45 new cases last fall that are slightly different from those shown in the illustrations. They have flat roofs, 50x58 inches. Furthermore I did not put on the vestibules, as on the old ones; for when the bees are shut in, if there happens to be a very warm day in the early spring when I am away, the bees come out through the cracks in the vestibule and are not able to get back into the hive. I lost quite heavily from several colonies, and one year I lost some bees from nearly every colony in one apiary on this account.

This is another instance where the system needs modifying if the bees are kept in out-yards where they can not be watched from time to time. Closing the entrance in winter may do at a home yard, but it will not do for colonies at outyards.

Remus, Mich.

### REMOVING HONEY FROM HIVES.

**Extracting at the End of the Season; How to Use the Bee-escapes and Still Extract While the Honey is Warm; Getting Ahead of Robbers.**

BY F. GREINER.

The harvesting of honey after the close of the honey season used to be considered as being accompanied by some unpleasant features, particularly so in the outyards, where the honey had to be loaded on the wagon. We used to wait until the bees had ceased flying in the evening before loading; but after some years of experience we have learned to do the work with celerity, and little annoyance of the bees, and get our load home in time to do the extracting before the honey becomes cold, even with the fifteen-mile drive thrown in. The secret is bee-escapes.

I have no buildings at my out-yards, and I bring the full supers home from the extracting-yard for extracting. This may not be profitable; and if I continue raising extracted honey I shall build a house or workshop there soon, and do the extracting as I take the honey from the bees. I would need fewer sets of extracting combs. I really do not fall in love with the practice of leaving the extracting till the end of the season; but at present I am doing this; and when the

time comes to take the honey I manage as follows: I aim to get an early start; and if I can be on the spot by 7 o'clock A. M., all the better. I remove the filled half-story extracting-supers from the hives as quickly as possible, drive and shake out the bees—not all, of course, but a large majority. As I use queen-excluders on all my extracting-hives there is no danger of getting queens, even if a few bees are left in the honey; so we need not be so very particular. We stack up the removed supers on escape-boards, and cover in the same way; and this is the way I use the escapes here—not at all on the hives. The escape which I prefer for this use on a stack of eight or ten supers is Dibern's four-point star escape, with a slight alteration of my own to make it safer. Of course, we are all aware that no cone escape absolutely prevents bees from returning to the honey. They find their way back through the cone and labyrinth escapes to some extent, and I want to prevent this. Why do I not use the safer Porter? It does not let in light, and the bees do not work out as rapidly as they do with the other style. To make sure that no bees find their way back into the honey I cover each escape on top of the stacks with a wire screen, such as I use to place on hives when moving bees instead of the wooden cover or honey-board. These screen-boards I lift off from time to time, as I am passing, which allows all the bees confined between them and the escapes to go to their hives. In about two hours or a little more I can take off 42 or 44 supers and have them ready for loading. This number makes a fair load for one horse. The man having two horses would, of course, want double the number of supers for his load. In order not to consume any more time in getting that many off and ready, and do the extracting the same day, he should have an assistant at both ends of the route. The full-depth frame for extracting is all out of question for me under these conditions. I do not think that any man is strong enough to handle full-story supers when filled. I know it is hard work to handle even my half-story supers, shake out the bees, load them on to the wagon, etc. The loading consumes about fifteen or twenty minutes of time. My nine-year-old boy Harold was with me on a few of these trips, and I found he could be of considerable help in keeping the supers all the time covered with escapes while I was doing the loading.

I have racks to hold supers, ten each; they have a bee-tight bottom; and when the supers are placed therein, and covered with an escape upon each stack of five, I need not feel uneasy as to the robbers getting in their work. In fact, they have not had much of a chance from the time we commenced till the load is all ready on the wagon, and the whole yard has remained rather quiet. No colonies have become greatly excited.

Before I go after the team I cover the rig with a canvas; and if the ground is sloping away from the bee-yard I may run the wagon a few rods away under some trees, if

there are any, but it is not very necessary. Every thing connected with the harness and the hitching up should be arranged with snaps as far as possible. It takes us but a moment to hitch on; then off we are. When a little distant from the yard I turn back the canvas and remove the escape-boards for a little while, so that the bees, left in the honey, will have a good opportunity to leave, which opportunity they will improve. Of course, we keep on moving all the time; and by the time I am a mile away all bees that will leave at all have departed, when the canvas is again spread over the load and fastened down. Neither dust nor rain can then do us much harm.

With a heavy load we make the homeward trip in from three to four hours, and we usually arrive about the middle of the afternoon or sooner. We lose no time in getting to business; and with a helper to do the uncapping we have the honey in the tank by night, ready again for a trip the next day.

Naples, N. Y., August 14.

### CONDITIONS FOR FALL OR SPRING FEEDING.

#### Syrup Made of Sugar and Water, and Honey Fed Fast in the Fall.

BY F. P. CLACE.

There seems to be a difference of opinion in regard to fall and spring feeding. We never handled more than 260 colonies at one time, nor produced more than 12 tons of honey in one season, so I have not been what you would call a "large bee-keeper," but as the profits realized have permitted us to retire, and devote our time to gospel work, my experience along the line of fall and spring feeding may possibly be helpful to others.

The best fall feed that I have ever tried—feed that will winter the bees perfectly every time—is made as follows: To every 10-qt. pail of water brought to the boiling-point stir in three 10-qt. pailfuls of standard granulated sugar. When this is all dissolved remove the vessel from the fire and stir in 10 qts. of extracted honey (the poorest you have will do). This will keep the feed from granulating. Give this to the bees, at blood-heat, in the evening (to avoid robbing), in a good feeder or a bake-pan covered with cheese-cloth. If in September you may feed from above. If you have put off feeding till cold weather, better place the pan under the bees, inside of a half-depth extracting-super, on top of hot bricks. By morning 10 or 15 lbs. of feed will be safely stored in the center of the brood-nest (just where it is needed), and the bees will wake up in the spring, after their long winter nap, as strong and vigorous as they were in the fall.

As weak swarms could be obtained for merely taking them out of the hives when we lived in Ontario, I used to get them every fall to help any stocks that were queen-

less (second and third swarms always have young queens, you know). Sometimes a couple of these swarms would be run into a hive filled with empty extracting-combs, and then fed up for winter. This is the cheapest way of getting bees if you have the hives and combs on hand, as your colonies cost nothing but the feed.

I remember once feeding up two swarms after they were in winter quarters (as an experiment) with this feed, and they wintered perfectly. In fact, the "wintering problem" had lost its terrors for me when I had 10 lbs. of this feed stored in each brood-nest. With this feed there is no water to be evaporated (using up the vitality of the bees), and the bees will not consume more than half the weight of this syrup that they would of honey while in winter quarters.

#### SPRING FEEDING.

As to spring feeding, while bees are safe that have sealed stores in their hives, if they are set out before there is pollen and honey to gather (the wisdom of this will depend upon how they are wintering), they are pretty sure to get to robbing one another if kept in paying yards (60 or 75 colonies). To prevent this if paid us well to feed very thin syrup (just sweet enough to keep them at work) on sunny days, and thus to keep them breeding up nicely. This, of course, applies to the home yard. The outyards were fed in the spring by giving those in need combs of honey reserved for that purpose. Keep the doorways well contracted.

Handsboro, Miss.

#### HOW TO REMEDY SLIPPING BELTS; POWER EXTRACTORS PROFITABLE.

A remedy for a slipping belt on power extractors was mentioned on p. 473, Aug. 1. I had a little experience along that line last winter, and am sure there is even a better substance than rosin on a slipping belt, provided the belt is not too loose.

When I entered the factory where I am working I was placed on a tin-slitting machine, and was too busy learning to operate the machine at first to notice the belts. One morning the belt commenced to slip when I ran the sheet through, and I noticed the belt was tight enough to operate both pulleys. Then I noticed pieces, almost half way through the belt, torn out here and there, and asked the man who ran the machine before I did what had been used. He informed me that rosin was what had been used, and was what I should use to prevent the belt from slipping. I obtained a bottle of crude castor oil and applied it. This made the belt grip firmly, and also made it pliable, although it did not seem to stretch. I found afterward that the best mechanic in the shop always used castor oil on his belts about every two weeks.

I believe that, in the future, every enterprising bee-keeper will have a power extractor of his own, just as farmers have all their heavy pumping and such work done by windmill or engine. I have turned extractors for the past nine years in clover and buckwheat fows, and know what muscle power is. I have also turned a six-frame extractor, and extracted over 5500 lbs. in a day—not a ten-hour day either—and I believe it would be hard to convince any one who has done the same that power extractors are any thing but profitable investments, even for a small bee-keeper, if he is specializing in bees.

Lynn Valley, Ont., Aug. 17. W. I. HOLTERMANN.

[Rosin gives only temporary relief. If used continuously it will ruin any good belt. A mechanic or wheelwright who makes a practice of using rosin on his belts generally does not know very much about his business. Castor oil or neatsfoot oil will lengthen the life of the belt and give good friction; but it should be applied the night before it is used.—ED.]





THE CORNFIELD AND THE HIGH BOARD FENCE NEXT TO THE BEE-YARD TO RAISE THE FLIGHT OF BEES OVER THE HORSES' HEADS.

## BEES AND NEIGHBORS.

### How to Prevent them from Stinging Animals on the Farm.

BY E. R. ROOT.

Shortly after we located our north yard at our basswood grove, our bees would every now and then sting horses in the adjoining fields. On one occasion we had a hurry-up call to send a man down, as our bees were interfering with a mowing-machine cutting red clover in the field adjoining. In one instance the driver was stung; and in another, man, horses, and mowing-machine cut across the field at a gallop. It was almost a wonder that there was not a bad mix-up.

Trouble seemed to occur more often when the bees were busy at work in the fields, rather than when there was a dearth of honey. When the mowing-machine or cultivator would come very close to the yard, flying bees in great numbers, going to and from their hives, would encounter the horses. While the bees were probably not disposed to be ugly, yet the sweaty horses with switching tails would sometimes invite an onslaught from one or more bees.

Our neighbor who owns the field next to the yard is a very good friend of ours; and, even if he had not been, we were under obligations just the same to prevent the annoyance. Two or three years ago we told him that when he had any cultivating or mowing in the field next to the yard, to let us know, and we would send down *our* man and team. But he demurred, saying that would be asking too much—that he would try to get along the best he could with his own team.

As the yard is located on high ground with a direct north exposure, it occurred to us that we might kill two birds with one stone—that is, erect a high board fence to cut off fierce north winds during winter, and during summer make the bees fly high enough to pass over any stock that might be in the field opposite. We accordingly built a struc-

ture 8 feet high and about 200 feet long. As this faces the incoming and outgoing electric cars from Cleveland, we concluded it would be a splendid place on which to advertise. We accordingly put our sign-painter at work. The result will be seen on the frontispiece of the cover and on the little photo herewith.

This big high board fence, as a windbreak during winter, accomplishes its purpose, and no doubt it is worth all it cost. As a big sign it has attracted the attention of the public far and wide, for it is a decided novelty to most people that queen bees can be and are reared like chickens. Many are the visitors who call to see "the wonderful establishment."

But as a means for preventing an attack on horses working in adjoining fields this big fence has been only partially successful. During the past summer, while our bees were working on honey-dew they were unusually cross, as we have explained in these columns on page 420.

This year our neighbor was growing corn in the field next to the fence. We learned that the bees had attacked his horses on one occasion while cultivating it, and stung his son and horses so badly that they were almost laid up. Hearing this we thought possibly there might have been a little robbing; but investigation showed that there had been nothing of the kind. The trouble was that the bees were interrupted in their flight; and the horses, remembering their previous experience, began shaking their heads and switching their tails, with a result that can be readily imagined.

We telephoned to our neighbor that the next time he came to town if he would go to the harness-shop and get two large horse-blankets we would pay the bill. Fortunately he was able to find two blankets that covered the flanks, back, and a portion of the head and neck. These were of a light yellow, and quite porous, but not sufficiently so to let bees through. It was our further plan to put a large square mosquito-netting around the head of each horse as an additional precaution. We supplied our neighbor with





A SCHEME FOR PROTECTING HORSES WHILE CULTIVATING A FIELD NEXT TO A BEE-YARD.

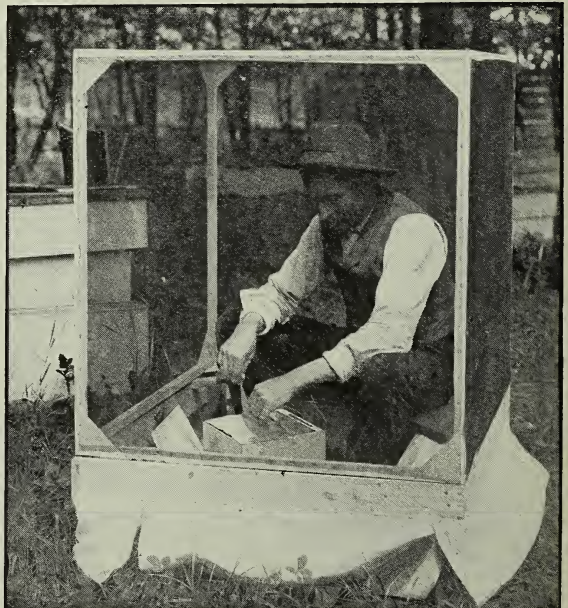
fields; and we found also they were very much inclined to sting. But our neighbor drove the horses up and down the rows just the same; but it was easy to be seen that, if it had not been for the blankets, doubtless there may have been more trouble. What makes a horse frantic is to have his sides and back stung

bee-veils and gloves, and told him that, the next time he was ready to cultivate, he should let us know. This he did. On arrival at the field we followed the driver with camera in hand up and down the rows. After tramping back and forth it became more and more evident that the bees resented being interrupted in their flight to and from their hives, and the horses began shaking their heads and switching their tails. The field was a large one, and, as was their habit, the bees would fly low till they came to the aforesaid fence, when they would rise and pass over it. So it developed that the fence gave only partial protection. It is probably also true that, without this fence, the bees might have been more furious in their attack; for the nearer they get to their hives when heavily laden, the crosser they are apt to be.

Well, how about these big horse-blankets and bee-veil? The former served the purpose of protecting the flanks and backs of the horses, and the latter the driver. The hind legs would be, of course, protected by the tail. Indeed, in the view shown the further horse will be seen in the act of switching its tail.

The bees were flying quite heavily on the occasion referred to in going to and from the

with no opportunity to roll or brush off the bees. If they fly about his head or feet he does not seem to care so much, because he can switch or brush them off, although it would seem a wise precaution to put mosquito-netting over his head. But our neigh-



ROBBER-CAGE WHEN IN USE.





A CONVENIENT CAGE FOR HOLDING BABY NUCLEI DURING ROBBER TIME.

The upper portion is hinged to the lower framework, so that the operator can get out without disturbing the hive or his appliances on the shelving.

bor thought this was hardly necessary in his case, for with the blankets in question he got along very well.

#### WIRE-CLOTH CAGES DURING ROBBERING TIME.

In order to see how the fence looks inside we will step within the inclosure. It looks really higher on this side than the other. The trees, together with this fence, shut out to a great extent light and air. It is almost too shady.

We find Mr. Mell Pritchard, the man who has charge of this apiary, handling a baby nucleus in a wire-cloth cage that he has designed. By reference to the larger engraving of the same thing the reader will see how he opens it so that an assistant can bring him any tools or frames. It will be noted that it consists of two parts, the lower framework mounted on four legs. To the horizontal side-bars are nailed curtains of common muslin, to fit the inequalities of the ground or grass. This is to prevent any robbers from passing up under and into the cage. In one corner and on one side are secured two boards, one of which serves the

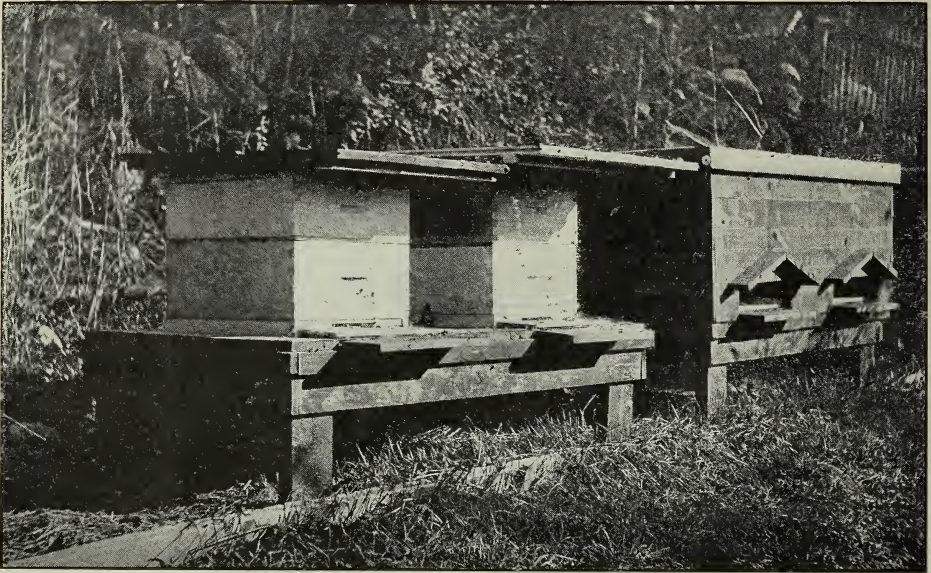
purpose of a seat and the other a shelf to hold material and tools.

There is no top to this cage, because our men at both yards find that robber bees will rarely pass downward through the top of a wire cloth inclosure of this kind, and, what is more, any bees within can easily escape.

When Mr. Pritchard desires to work on another baby nucleus he picks up the whole thing and walks off to another. When he wishes to get out of the cage, and still is not through with his work, all he has to do is to tip the upper half over and step out.

We have stated that a good many visitors call at this apiary as they likewise do at the home yard. In the following issues we hope to show our own readers, as well as the general public, what we do there and how we do it; how a man and a boy have turned out as many as 600 queens in a month. All this and more will be the subject of a future article. Later on we will give snap shots of every-day work at our other yards, where our men will show some tricks of the trade that may be of value to the public generally.





PERMANENT STAND WITH SIDES REMOVED, SHOWING POSITION OF HIVES, SUMMER AND WINTER.

#### FIRELESS-COOKER WINTERING-BOXES.

**Packing-cases for Winter which Can be Stored Away in the Flat during Warm Weather.**

BY DANA F. DOW.

The veteran bee-keeper who reads this title may indulge in a hearty laugh, and wonder what these "fool amateurs" will think of next. Nevertheless, this article may interest those who keep a small number of colonies and are forced to winter them out of doors in a cold climate.

Here in Eastern Massachusetts (six miles from Mr. Alley's former home), where the temperature in winter is very variable, and may drop to 15 degrees below zero, the question of adequate winter protection is an important one. Looking about for some convenient method, I found none that quite suited me. Chaff hives, tenement hives, and outside cases are all good, but are either cumbersome or require the hives to be moved in the fall and back again in the spring, or make necessary manipulations difficult.

In trying to solve the problem I hit upon the idea of a permanent double hive-stand which could be used all the year round, being easily converted into a box for winter protection, the hives standing always in the same position. Applying the principle of the "fireless cooker," that is, retaining the natural heat by means of thick packing material, the bees are made so comfortable that they can easily reach the sealed stores outside the cluster without being chilled.

Hay (not too coarse in quality) is an ex-

cellent material with which to pack a bee box, and, unlike loose ground cork or saw dust, is not a nuisance, but can be readily packed or unpacked in a few minutes.

Having Danzenbaker hives I made the box-bodies deep enough to take in a second story with a regular cover, and then have a few inches to spare. There is a space of one foot between the hives (in the future I shall make it less), four inches at the back and sides, and six inches in front. A bridge connects the hive entrance with the opening in the box, the Danzenbaker alighting-board being left on and triangular blocks used to contract the entrance in the coldest weather.

By means of hinges the sides of the box-body are attached to the back, and the front is fastened to them in turn by two hooks and screw-eyes at each end, thus making a box which can be folded up and stored away flat in the summer without taking up unnecessary space.

In order to shed water perfectly the box-body telescopes down over the stand an inch, while the cover comes down over the box about three inches. Some objection may be made to a flat cover; but a strip of roofing-paper makes it water-tight, while a slight pitch given to the stand causes any water to run off quickly. This cover is most economical of space, and can be raised and pushed either way in order to get at a colony, or removed entirely when necessary.

I will now show you how this kind of stand operates in this locality. During September we have a heavy flow of goldenrod honey, the bees working freely in second stories, and making a fine lot of sealed combs for winter stores. This goldenrod honey, by the



way, must be different from the Ohio variety; for, although of a nice amber color, it is not eatable, having a strong stuffy odor, and a taste which never evaporates. A shop in which this honey is stored will smell much like a horse-barn. However, it is good for winter stores, and might be of value in cooking. In the middle of this honey-flow, when the nights begin to get cool I put the boxes on the stands without any packing, thus protecting the hives at night when the bees are "boiling down" the nectar with a roar. All necessary manipulations can be carried on as usual.

When the flow is over, the second stories are removed, leaving plenty of stores in the lower hive. Being protected, the bees will breed some during October and November, and go into winter quarters with plenty of young bees.

A warm day in November is a good time in this locality to give the final stores for winter. Last year, Nov. 11 was such a day, the bees flying freely. I opened all the hives and exchanged light frames for heavy ones of sealed stores, then on each hive I placed a super-cover having an auger-hole bored in the center.

Over the hole was placed a Page top feeder, which, being covered with wire netting, allows warm syrup to be poured in without the bees being able to get out. A strip of cloth is then placed over the feeder, and the second story filled with hay, also the outside box. The feeder is now the warmest place in the hive, and the bees seem to like to



DOW'S WINTER CASE WITH THE COVER AND TOP PACKING PUSHED TO ONE SIDE.

"roost" there, although it may be empty. Should feeding be required in the winter or spring, it takes but a moment to remove the hay and cloth, pour in the feed, and replace the packing. If the bees are not visible, just rap on the feeder and say "good morning," and they will come scrambling up to see who is "knockin' at de do'."

If you believe in a sealed cover for winter, just close the auger-hole with a cork, and you have it; or if you prefer the absorbent-packing system, then leave the hole open, and the moist air will filter slowly up through the hay, and condense under the cover.

One day last winter, with the thermometer at 18 degrees, I flashed sunlight through the entrances by means of a mirror, and the examination showed perfectly dry interiors, with bees clustering under the frames in slowly moving masses.

With the packing removed the empty outside boxes will be left to protect the bees working in second stories (*a la* Doolittle) until settled warm weather, when they will be removed and stored away for the summer and shade-boards put on the hives.

This kind of stand, for this locality at least, gives perfect protection, easy manipulation, and a minimum amount of labor in lifting and moving the hives.

Ipswich, Mass., March 25.



CLOSE VIEW OF THE STORM-DOOR ENTRANCE OF THE WINTER CASE.

## BEE-KEEPING IN THE TRANSVAAL, SOUTH AFRICA.

Moving Bees Short Distances; the "Spirit of the Hive;" Three Workers Sealed in a Queen-cell.

BY D. S. VAN WARMELO.

Being a regular subscriber to GLEANINGS, and much interested in bee-keeping, I wish to introduce myself and part of my apiary to its readers by a photo.





D. S. VAN WARMELO'S APIARY IN SOUTH AFRICA.

About 18 months ago I imported Italian queens from England, and am now experimenting with their genuine offspring in Pretoria—the first person who has succeeded in rearing them pure in the Transvaal. One or two of my observations with bees may be interesting, the first of which, probably, none but myself has ever witnessed.

During the Anglo-Boer war, while I was fighting the enemy my brave bees in Pretoria stung an English officer's horse to death that had cost him £40, or nearly \$200. My mother was immediately ordered by the provost marshal to remove the bees, which she did, but to a place that did not suit me on my return after the war; so I made up my mind to move them to a place about 150 yards distant. There were only six colonies. The first thing I did was to put them close beside each other. During a honey-flow, when I knew the well laden bees of a strange hive would be accepted with open wings, I removed one outer hive to the new place after sunset; waited two or three days, and again removed an outer hive, continuing to do so until there was only one hive left—a tremendously strong colony, flowing over with the foraging bees of the other five hives that had returned to the old spot. As the removal had been gradual, the foraging bees had become used to shift, and concentrated toward the center. This last hive I removed after a few days, after sunset, and put an empty one in its place. Next evening there was a great queenless cluster in this empty hive, which I took and shook out before the hive I had removed last. The bees were accepted without demur, most of them having acquired the same scent.

This proceeding I continued for a few nights successively, when, lo! the bees sav-

ed me the trouble of carrying the dwindling cluster to its new place.

One night after sunset, while I stood watching to see if any bees were still flying out from the hives, prior to my fetching the cluster in the empty hive, I heard a swarm of bees over my head, which I saw entering the last hive, the one in front of which, every evening, I shook out the cluster. I immediately hurried to the hive that had contained the cluster, which, according to my expectations, I actually found empty. The bees had agreed between themselves to put an end to this shook-swarming of the master by swarming out of their own accord to the abode where I had been trying to make them stay.

Though it is evident that there had been communication between the cluster and the mother-hive, it would be too far-fetched to suggest the other alternative—namely, that the bees of the queen-right colony had sent out scouts to bring the cluster home.

This is an instance of Mæterlinck's "spirit of the hive" that makes us wonder what reasoning powers bees have.

#### ANOTHER CASE OF THE ADAPTABILITY OF BEES TO CIRCUMSTANCES.

This case was brought to my notice in the way of stimulating a colony containing fertile workers in the following manner:

An Italian queen that I had reared carefully in a nucleus hive I could not find on the combs about a day after it had hatched. On reopening the hive on the following day I found to my surprise the cell from which the queen had hatched sealed over again. I opened it, having an inkling of what had happened. My conclusions were verified. It contained two dead worker bees and one live one. There is, in my opinion, no doubt that these three bees were closed up by the

despairing others in order to force them to feed on royal jelly, and that two were stung to death inside the cell.

Again do we wonder what "spirit of the hive" moved the bees to act unanimously in this particular way.

Queenless bees seem sometimes not to await patiently the proper hatching of the queen. I have on several occasions, upon opening a nucleus hive just shortly after the queen had hatched, found the cell torn open at the side near the top instead of the lid being lifted in the ordinary way. There was no other queen-cell present in the hive, and the newly hatched queen was there all right.

The only explanation I can give is that the bees, having received a grafted cell, did not know when to cut down the top of it for the easy lifting of the lid by the queen, and, consequently, hurried to her assistance from the flanks as soon as they heard her calling inside.

Harmony, Pretoria, Transvaal, South Africa, March, 1909.

[In a queen-rearing yard it is not uncommon to find a worker-bee, either dead or alive, imprisoned in a cell from which the young queen has recently emerged. Very often there is a sort of cap left hanging to the cell, like the cover to a coffee-pot, and a bee in a tour of investigation crawls under this cap into the cell. The cap drops down, when it is subsequently sealed down by other bees. We do not think there is any design or purpose on the part of the individual bees or of the colony. It is simply an accident when one or more workers happen to get inside of a cell and are imprisoned.]

Occasionally in a queen-rearing yard also we find where a cell has been opened at the side, as you describe, releasing the young queen just ready to hatch. Apparently the purpose of the bees is to tear down the cell; but discovering a nice young lady, ready to make her bow to society, change their purpose, and allow her to live among them.—Ed.]

### **FREEZING DOES NOT KILL BEES.**

**Will Bees, Like Ants, Stand any Amount of Cold?**

BY H. D. TENNENT.

Will some one tell us whether a frozen bee is or is not a dead bee? At the present rate some fellow will be throwing his bees away in the fall, and expecting them to come back ready for business in the spring. The books speak of bees freezing off the cluster in winter; but they also tell us that most cases of winter-killing are the results of starvation and not of cold. One says that a temperature of 40° Fahrenheit will so benumb a bee as to deprive it of the power of flight, and that it will soon perish unless restored to a warmer atmosphere. But the same book also says that they stand the winter in very cold places, such as Russia, with very poor

protection, and may even be frozen into a solid lump of ice without being killed, and that the degree of cold which they can stand has not been ascertained.

The poor hives in which bees will sometimes winter would certainly lead one to think that they could stand almost anything. I have brought bees to life which had lain out in cold damp weather, but not actually frozen, for as much as five days; but dry weather would surely shorten the time.

For experiment I once put half a dozen bees on a piece of comb under a tumbler on a metal-roofed hive, on a cold evening. In the morning thin ice had frozen in both top and bottom of a tin cup of water left beside them. The bees had fallen off the comb, but the moisture on the sides of the tumbler had not yet frozen, showing that they must have given off a great amount of heat before giving up. When warmed up they were as lively as ever. The experiment was repeated the next night, which was slightly colder, but not a bee revived. The tumbler was propped up a little both times to give them air. I also put a dozen bees in a 4-oz. wide-mouth bottle, chilled them on ice until motionless, and then corked them up and kept in ice water for one week, at the end of which time they were decidedly dead, perhaps from lack of air this time, as water in tissues, as of insects and plants, must get some colder than ice water to freeze.

Any one who has split wood in winter has probably noticed how ants will revive after being frozen almost any amount; but that bees can stand as much is hard to believe. Perhaps they are like some plants which will be killed by a slight freeze if warmed up too quickly, but will come out all right if allowed to thaw out slowly in a damp place.

There would seem to be room for some careful experimenting here unless some one knows more than he has told us so far.

By the way, has the microbe of spring dwindling been discovered yet, or do the doctors still disagree about the exact cause of it?

McConnellsville, O., May 21.

[Bees can not stand freezing like ants, fish, and some reptiles; but they can remain in a chilled condition for a week or ten days—how much longer we do not know, but probably not much longer. We once tried the experiment of subjecting bees to a zero temperature, and found that two or three minutes was enough to kill them stone dead. Whether they would have died if they had been brought to that condition more gradually we can not say. But they may be subjected to 33 or 34° for about a week provided they are not thawed out too quickly.]

It is interesting to note in this connection that a piece of concrete work just made and frozen solid may not be injured at all if it is thawed out very slowly; but if it is warmed up too quickly the whole work will probably be spoiled. The same rule seems to apply to fish, frogs, and some insects that can stand freezing.



Bees may fly out when the weather warms up in midwinter, and on a sudden drop in temperature chill and lie on the ground for days, and when a warming sun comes out they will revive and go back into their hives. See page 95, Feb. 15, for this year.

The experiments conducted by H. R. Boardman, as reported in our issue for May 15, p. 303, of current volume, are interesting in this connection. We hope our practical and scientific men will work out this problem, because it has a bearing on the general subject of wintering. That the bee is a semi-hibernator, capable of remaining in a chilled condition for some days without food, and revive when warmed, is now clearly proved; but it is not a true hibernator. On this whole question there is a new and comparatively unexplored field, and it is time we were knowing something more about it.—ED.]

### SHIPPING BEES IN CARLOAD LOTS WITHOUT LOSS.

#### The Importance of Wedging all the Hives Tightly to Prevent them from Shaking around Inside of the Car.

BY H. F. HART.

On page 260, May 1, the editor asks for the experiences from those who have shipped bees in carload lots. I have shipped two cars in the last two years without the loss of a colony, and with hardly a bee flying. I do not use box cars, however, for I believe cattle-cars are more suitable.

The first car was shipped in December, 1907, when the temperature was about 40 degrees. In this car I had wire cloth only over the entrances. The other car was shipped in February, 1909, when the temperature ranged from 50 to 65; and in this car we had the tops of the hives also covered with wire cloth. I do not find it necessary to spray water over the wire cloth.

The principal thing to be careful about is to brace every thing firmly to prevent the hives from shaking around, and this can be easily done in cattle-cars. The hives are placed with the combs parallel to the rails in a row across the car. In front of the row a 1×3-inch strip of furring is nailed to the slatted sides of the car in such a manner that the edge touches the fronts of the hives. This will leave a 3-inch space between every two rows of hives. Two more pieces of the 1×3-in. strips are then tacked on the tops of the hives, making a support for the next tier above, which tier is also braced in front of every row as was the lower one. By this plan two or even three tiers may be put in if necessary to get all the hives in the car. When the first two or three tiers of one row each are placed and properly braced, the next tiers also of one row each are put in front and braced in the same way until the car is filled from both ends toward the center, leaving a space opposite the doors. If supplies are sent they

may be loaded in this space, and properly wedged so that nothing can get loose. If no supplies are included, cross-pieces should extend from the two lots of hives in such a manner that there can be no possibility of individual movement of the hives. In this way two or three hundred colonies can be packed in a car and shipped without loss.

My first car, owing to a wreck, stood on a side track for three days, and was six days on the road all together. In spite of this, there were almost no dead bees to be found.

The second car contained poor hives, with the bottom-boards so rotten that, when the colonies were transferred later into new hives, many of the old bottom-boards fell to pieces. However, there were not a dozen bees flying when the car reached its destination, and there were practically no dead bees in the hives resulting from the confinement. No attendant accompanied either car. Allenville, Ala.

[When bees are shipped during the winter months, it is not necessary, of course, to spray water over the tops of the frames. When shipped in hot or even warm weather, especially if in a box car, the wire-cloth screens should be sprayed often.—ED.]

### LACK OF VENTILATION CAUSES THE WATERY CAPPINGS.

#### Some Good Proof in Support of the Contention of Mr. Whitney, as Given on Page 362, June 15.

BY J. P. CALDWELL.

This question of greasy or watery sections is one in which all should be greatly interested; for if we have been condemning our best queens without a cause we should at once call a halt. That Mr. Whitney is right in this matter is very clear to me. The cause of these watery cappings has been puzzling me for years. I have never believed that the progeny of some queens capped comb honey as though it had received a coat of varnish, while other bees of the same breed did not. That it is a lack of proper ventilation has been my belief. I have found such honey only in very populous colonies. I have noticed a great many times in cavities in rocks when small zigzag openings entered the abode of the wild bees, the comb honey taken from these cavities looked as if it had been treated to more than one coat of varnish. But honey taken from a large crack in the rock shows no sign of the watery cappings, the new combs being capped beautifully.

I have raised section honey by the ton, and have been an observer of these watery cappings for thirty years, and I have concluded that, with proper ventilation, there will be few if any of these greasy sections found.

I once had a very prolific Cyprian queen which kept a ten-frame Simplicity hive filled to overflowing with bees. At that time I used seven wide frames holding eight one-pound sections each, and with this large hive I was

distressed to find my sections so greasy-looking that I extracted the honey from them, although I had orders for more comb honey than I could supply. I filled these wide frames with a fresh supply of sections, placed them in the hive, and at the same time raised the hive two inches from the bottom-board with four two-inch blocks. In due time I had as nicely capped honey as I could wish for.

Blanco, Texas, June 28.

### WINTERING BEES IN A WARM ROOM.

#### A Single-frame Nucleus Wintered in a Warm Room in an Observation Hive with an Indoor Flying-cage Instead of an Exit out of Doors; an Interesting Experiment.

On June 14, 1908, ten days after swarming, a single comb well filled with brood, and containing two queen-cells, was taken from a full-sized colony and placed in an observation hive. The queen hatched June 19, and began laying June 30. The young bees commenced hatching July 20. The old bees had then become reduced to a mere handful; but ever since the hatching of the new brood the colony was full and strong. Feeding with sugar syrup was resorted to on Aug. 22, and continued until Sept. 1. The bees had then filled three-fourths of the frame with the syrup, and capped it over, and this formed the winter store.

On the evening of Oct. 29 the hive was brought into the house and placed on a table with its entrance opening into a box or cage which served as a flying-space. This cage was two feet each way, and consisted of a framework of  $\frac{3}{4}$ -inch pine strips covered with wire netting. A hinged door divided one of the sides vertically in halves, and provided an opening large enough to admit potted plants of good size. The entrance to the hive was in the center of one side, facing a window.

For the first four days there was some beating of wings against the wires in the attempt to get out, a few bees wearing themselves out in the struggle; but after that the lesson seemed to have been learned; and every day throughout the winter bees came out into the cage, oftentimes flying about without alighting, and returning to the hive. The temperature of the room ranged from 50 to 70.

On Jan. 26, 1909, the queen began laying, and continued until a space five inches in diameter on each side of the frame was occupied with brood. Rye flour was placed in the cage Feb. 8. The bees did not readily take this, although they had eagerly stripped the pollen from the flowers, such as mignonette and cineraria, which had been placed in the cage; but when the rye flour was sprinkled upon the blossoms the bees worked upon it very willingly. At this time, the winter stores were getting very low and the queen stopped laying.

On March 27, feeding was resorted to, honey being used this time instead of sugar syrup. This feeding bees continued until the outside supply was available. The queen began laying again soon after the feeding commenced. Fresh water was kept in the cage near the hive entrance all winter.

One of the very interesting features which the enclosed flying-cage made possible was the opportunity of accurately noting the number of bees that died from day to day. During November the mortality was 93; in December it was 60; in January, 154; in February, 201; in March, 361; and up to the present writing, April 9, the death rate averaged about the same as in February, while the hatching of the new brood appeared to have been kept the total number in the colony nearly uniform.

THE SCHOOL OF HORTICULTURE.

Hartford, Ct.

[This is, indeed, a very interesting experiment, and we hope others of our subscribers will try it this winter.

If we can once get bees to fly in a small wire-cloth enclosure without bumping their heads against the wire we have before us possibilities of mating in confinement. Who will work it out?—ED.]

### CARPENTRY FOR BEE-KEEPERS.

#### Making Frames.

BY F. DUNDAS TODD.

In the end of 1906 Mr. Hutchinson told in his excellent *Review* how he secured good frames all cut and ready to put together at less than one cent each, this low price being possible by getting the planing-mill people to make the parts out of waste at their leisure. I thought I went him one better when I ordered the material in strips and cut them out myself, but I find my frames cost nearly two cents each. I was charged nearly half a cent a foot for  $\frac{3}{8} \times \frac{7}{8}$  lumber; and since each frame contains 41 inches, not to speak of the necessary waste, one can readily see what the material costs for one frame. As I have already told, regular factory frames for this size of hive cost me here under three cents.

Here are the specifications for frames suitable for the divisible hive I have been describing:

Top-bar,  $18\frac{3}{4}$  in., 1 piece.

Bottom-bar,  $17\frac{5}{8}$  in., 1 piece.

End-bar,  $5\frac{5}{8}$  in., 2 pieces.

These are made from  $\frac{3}{8} \times \frac{7}{8}$  stock.

First, the lumber must be cut into proper lengths; and since I had to make 200 frames, a jig was a necessity to save time, and, above all, to ensure accuracy. This particular jig took the form of a rather long miter-box. To make, get two pieces of  $\frac{7}{8}$  lumber about 3 feet long, and one a foot shorter. I really used fence-rails. The long pieces should be about four inches wide, the third about two inches. The wide pieces are to form the sides of the miter-box; the narrow piece, the



bottom. The idea is to have a channel just wide enough for the strip to slip in; and then when a piece is sawed off it will drop out of the way and make room for a new portion of the strip.

So the sides are nailed to the center part of the box, the bottom being about 3 inches short at one end, and less than a foot at the other. From this end measure back a distance of  $17\frac{3}{4}$  inches; and from the same starting-point,  $18\frac{3}{4}$  inches. If any thing, the measurements should be a trifle short rather than the least bit too long. The lines will be a little over one inch apart; and since we are going to make saw-cuts down to the bottom-board at these points, there will be great risk of having one or both of these pieces knocked out; so, before sawing you had better buttress them up with strips of wood at least half an inch thick. This done, run perpendicular lines across the face of the sides, and also across the edges, then carefully saw down to the bottom-board. Then nail temporarily a bit of wood across the ends of the boards so as to form a stop for the strip. Now test your distance, say with a top-bar—that is, make one. When cut, the piece will drop down. Measure it; and if all right, fasten the end piece with screws, as the bringing forward of the strip has a tendency to knock off the stop-block. If the bar is found to be too short, one can pack paper between the stop-block and the end of the box.

Once the top-bars are all cut, proceed along similar lines with the bottom-bars. The end pieces should be cut at the other end of the miter-box.

To put the pieces together accurately and speedily you will need a form—that is, a jig, in which the parts can be held firmly while they are being nailed. Luckily this is easy to make. The framework consists of two pieces of  $\frac{7}{8}$  lumber  $5\frac{1}{2} \times 22$ , one of which stands perpendicular to the center line of the other. On one face of the upright piece is nailed the smaller pieces that clamp the frame in position.

Having got the two principal parts, take the one intended for the upright and draw on it the lines that will represent the outside edges of the end-bars. These, of course, will be  $17\frac{3}{4}$  inches apart. Next get two pieces of  $\frac{7}{8}$ -in. lumber—that is, the thickness must be the same as the width of the frame-bars, and not less than  $5\frac{3}{4}$  inches long. Exactly 5 inches from one end in each make a half-check  $\frac{5}{16}$  in. wide. The top-bar will rest

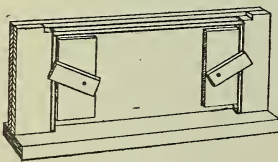


FIG. 1

Still using  $\frac{7}{8}$ -in. lumber, make two pieces about  $2 \times 3\frac{1}{2}$ , which are to be used as inner guides for the end-bars. Place the end-bars in position to get the dis-

tance; bring the guides up snug, but not too tight, and nail.

Then make two thumb-pieces, not thinner than  $\frac{3}{8}$ , and fasten with screws. Lastly, nail the upright to the base.

In making a frame, first nail on the bottom-bar, then the top. Begin by putting the end-bars in the jig, then turn the thumb-pieces as shown in the drawing, and nail on the bottom-bar, using  $1\frac{1}{4}$  thin cement-coated nails, two at each end. Now turn the frame over, resting the bottom-bar on the base-

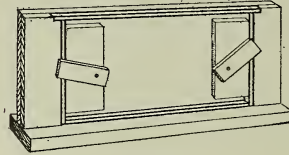


FIG. 2.

Drop the top-bar into place, where it will be held in correct position by the lugs of the uprights. Nail, and your frame is finished, except the spacing-staples, Fig. 2.

For putting together Root's  $5\frac{1}{2}$ -in. frames I use a jig that is even simpler, and exceedingly convenient. So pleased were the boys over it that it has been named by them Todd's "Reversible," because all the pieces can be put together in any position, and one can drive all the nails by reversing the frame.

Make a board  $\frac{7}{8} \times 5\frac{1}{2} \times 17\frac{3}{4}$ . The length must be exact, and the ends perfectly square. Brace each end by a piece  $\frac{7}{8} \times 5\frac{1}{2} \times 2$ , taking

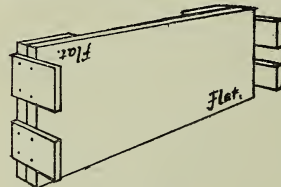


FIG. 3.

care that the edges be perfectly flush. Then make four pieces  $\frac{7}{8} \times 2 \times 3$ , and nail two at each end, as shown in Fig. 3. When properly fitted they will grip a frame tightly.

To use, set on edge in front of you. Lay a top-bar in position on the bench upside down; then the end-bar; last of all, the bottom-bar. Nail the latter, reverse the jig, keeping the same side toward you, and nail the top-bar. Remove the finished frame and proceed with the next, using the jig as it is, for, of course, it is always ready.

To ensure the frames always being made one way I have marked on the face of the board a description of the end-bar that comes in contact with that spot.

The same jig ought, I fancy, to be as practicable for larger-sized frames. Anyhow, I find it a great comfort for the ones I use.

Victoria, B. C., Canada.

[Only those who have used jigs or forms for work where a number of parts are made exactly alike can realize their advantage. Usually an unskilled workman can do better and faster work with a form than a skilled workman can without one.—ED.]

## HEADS OF GRAIN FROM DIFFERENT FIELDS

### A CASE WHERE BEES FLEW SIX OR SEVEN MILES IN SEARCH OF NECTAR.

I have noted with interest the controversy that has been going on as to the distance bees habitually fly for nectar. About twenty-five years ago I had a brother living in the town of Milton, Ill. He is a physician, and an intelligent bee-keeper of much experience. Milton lies exactly four miles west of the west bank of the Illinois River. At this point the bottom lands are all on the east side of the river, and are fully three miles wide. In the fall of the year these lands are thickly covered with Spanish needle, asters of various kinds, goldenrod—in fact, with all the usual autumn flowers that bees like so well.

My brother once noticed that his bees were very busy; and after a moment's observation he discovered that they were coming from the east; and on leaving the hives they went to the east. There is a large public highway leading from Milton directly east to Montezuma, on the river bank. My brother, being a physician in the daily practice of his profession, was traveling that road almost every day. He soon discovered that, high up over his head, there was a perfect stream of bees going to and coming from the bottom lands east of the river. This led to further investigation, which proved that those bees were working the whole territory of bottom lands ranging from six to seven miles, from home. Italian bees were not very common in those days; and the people living on the east side of the river, discovering the yellow bees, were very curious to know where they came from. When it became known that there were none except in Milton, four to seven miles away, of course they were much astonished.

About the truth of the above statement there can be no question. My brother now lives in California, but was visiting me a few weeks ago, when he gave me all the particulars. This settles the matter with me, because I know the source from which the information comes is absolutely reliable.

White Hall, Ill., May 8.

A. W. FOREMAN.

[Years ago we had a well-authenticated report where bees flew seven miles across a body of water for stores. There can be no doubt that the facts given by Dr. Foreman are just as authentic.

We still cling to the opinion that where bees have an unobstructed vision, as across a valley or over a body of water, they will fly much further than when that vision is obstructed by intervening woods, buildings, or shrubbery on level country.—ED.]

### BEE-FLIGHT ON PLAINS AND HILL COUNTRY.

Having noticed considerable controversy in the bee-journals of late, regarding the distance a bee goes in search of nectar, I should like to offer some evidence on that point.

Last spring I purchased two colonies of yellow Italians, these being the only bees within seven miles of here. I had a good chance for observation along these lines. In May I saw these bees at a distance of a mile and a half from the hives. We are located in a valley, and the bees went either up or down in search of pasturage. At this date I have good reason to believe that they go as far as four miles, because there is no pasturage within that distance; yet they are storing honey from some source that I have as yet been unable to locate. We have several kinds of sage here, but I have not seen a bee on any of it this season. The variety of sage that is most plentiful in this vicinity does not blossom at all, but has a kind of bud on it that does not open up. We have some alfalfa, but not enough to make sufficient pasturage for bees.

Mohler, Wash., July 30.

C. L. SNIDER.

[Where bees are located down in a valley, up on a hill, or near a body of water, they will fly much further in quest of stores than where they are situated on a plain. The evidence thus far submitted goes to show that quite conclusively now. It is also shown that, in level or slightly rolling country, they seldom go beyond a mile and a half.—ED.]

### SEALED COVERS VS. THOSE THAT PERMIT THE ESCAPE OF MOISTURE.

I shall have to vote with Mr. Coggsall, p. 174. March 15, in regard to covers. We began here with the reg-

ular flat or Higginsville cover, and later began using what we call a Gill cover. In the winter of 1902 we lost fully half of our bees with the flat cover, which was sealed down; and but for discovering the conditions early in January, and raising these covers so as to place an eight-penny nail under the edges, and raising the hives from the bottoms about the same space, I feel sure we would have lost nearly all, as there was a thaw about that time; and so much water had condensed, that, when the hive was raised, a stream as large as a goose-quill would run out. The Gill cover has a space of about  $\frac{1}{4}$  inch at each end where it projects beyond the end of the hives, and a two-inch space above the frames, the frames being covered with two thicknesses of burlap, allowing constant ventilation over the burlap-covered frames. The hives were dry under the Gill covers, and the bees in good condition. This Gill cover is about the same as the Colorado cover in principle, but I am not sure that the latter allows as much space at the ends.

Since that winter we have changed to this form of cover, and have no trouble from moisture.

I am, however, of the opinion that more packing is needed. Early in spring, about the time brood-rearing begins, we usually put on paper or other extra covering over the frames, under the cover. We have tried the plan of putting tarred paper over the entire hive, putting it on both in early fall and near spring, but have been unable to see any benefit from it. It is possible that, since we began using it, our seasons have been so favorable to early brood-rearing, it has not been a fair test of what it might do in a cold backward spring. The proportion lost in wintering has not been different when it was used from where it was not.

Berthoud, Col., March 26.

W. HICKOX.

### DRONES REARED ABOVE PERFORATED ZINC.

Referring to my question in your issue for Aug. 1, p. 477, your answer did not quite cover the situation. The question was: Last spring I had a colony of golden Adel bees which had run short of stores during the winter, and I had some brood-combs, left from last year, so I placed the combs containing honey in a hive-body and put them on the yellow colony with a queen and drone excluder between the two. In two or three weeks I examined them again, and found some drone brood in the upper story. Some had hatched, and were as black as could be. Where did the black drones come from when the drones below were as yellow as they could be? The excluder was queen and drone excluding, any way.

Piercetown, Ind., Aug. 16.

JACOB GARBER.

[We beg to acknowledge your special reference to the use of perforated zinc between the upper and lower story, which fact we overlooked, perhaps, in our previous reply. We could account for the drones above this metal by the presence of laying workers. Sometimes these bees will begin laying eggs in an upper story that is separated from the lower one where a queen is present. Cases of this kind, however, are very rare. There is no other way by which the drones could get above the metal. The very fact that you found some drone brood strengthens this theory. If you examine again, you might find a plurality of eggs in some of the cells, for this is one of the characteristics of laying workers.

Laying workers are more inclined to get in their work in colonies of Cyprian, Holy Land, and Syrian bees. The so-called Adel bees, we think, are a sport from one of these Eastern races. If that is a fact, it is not surprising that laying workers should be found in the upper story. Of course, you understand that such workers can pass through perforated zinc the same as any workers. While the Adels are yellow bees, yet drones from laying workers of the same stock might be black.—ED.]

### TO PREVENT COMBS FROM BREAKING IN AN EXTRACTOR.

I have made an improvement on the baskets of my honey-extractor. I have arranged an auxiliary support for the comb in the shape of a piece of heavy wire netting supported in the basket in such a way that the frame completely surrounds it and fits over it. The comb can rest squarely against this wire netting so it is not strained by the centrifugal force. Hoffman frames, on account of their projections, often break the combs.

My machine is old-style, and geared pretty high—4 to 1. I made the comb support smaller than the frame so that the frame could project over it around the sides, as mentioned above.

Bedford Station, N. Y.

G. A. MATHEWS.



## BEES KILLED BY TELEPHONE WIRES.

Speaking about bees being killed by telephone wires I would say there are about 24 of them running by our yard. Yesterday, July 19, being a cold day, and the wind being from the north, and about 45 degrees in temperature, the bees working on basswood, it killed them by the thousands. It seems as if there ought to be a law to reach these companies, but so far I find none. This is not the first time. I have noticed it for four or five years. It cuts lots of them in two when they strike wires just right and are loaded.

Black River, N. Y.

G. B. HOWE.

[It will be remembered that, something over a year ago, we told how the bees were found dead and dying in front of our factory buildings on the sidewalks and on the pavement, and how we were unable to account for this mortality until Mr. L. A. Aspinwall, of Jackson, Mich., gave it as his opinion that it was because of the telephone wires that were strung across just in front of our bee-yard. Investigation revealed that this was the source of the trouble. The bees would strike the wire, drop down, and finally, in their death-struggles, would push the abdomen from the waist, or thorax. One of our correspondents doubted whether the telephone wires were the cause, and suggested poisoning from some honey-plant. The first report that we have had confirming the statement of Mr. Aspinwall is the one above.—ED.]

## MAY HONEY BE SOLD WITHOUT LABELS ON THE JARS?

Can I sell honey in glass without a label on it, either from a wagon on the street, or in a grocery? My bees gathered a good deal of honey-dew before clover, so it is mixed. It is of good flavor, and not so dark as buckwheat, and very much better. What shall I have to label it to sell it near home and in small towns?

Petersburg, Pa., July 28.

S. E. JOHNS.

[One is not required to label his honey; but when he does so, the labels must state the exact character of the contents of the package. The national law applies only to interstate and territorial business. Any one has a right in his own State to sell honey, or any other commodity, irrespective of the requirements of the national law; but if such honey or other commodity is not properly labeled, if sold out of the State the producer or seller, or both, will be liable. But in many States there are pure-food laws based on the national law, and most States have some sort of pure-food law, so it is wise for the average person, as far as possible, to comply with the requirements of the national law; for in so doing he will probably come within the restrictions of his State law.

Answering your questions more specifically, if you put a label on your honey at all, it will have to specify the contents of the package as honey-dew honey. To the average producer this would carry no unpleasant suggestion unless at some time such producer had tasted some bad honey-dew.—ED.]

## CAN ROSIN IN TIN CANS TAINT HONEY?

As I have purchased some new honey-cans, one extractor, one uncapping-can and honey-tanks, I gave them a good cleansing before using; and after using, the honey tasted strongly of rosin—the kind of rosin they seem to use for soldering. Do you think that honey, if left standing in the cans for a long time, would taste of rosin?

Inland, Neb., Aug. 13.

R. HANLON.

[We should be inclined to believe that the peculiar taste which you attribute to rosin is rather due to the presence of considerable pollen mixed with the honey. Pollen, where there is much of it in the honey, will impart both a flavor and a color to it. Some otherwise good extracted is impaired materially because of too much pollen being mixed with it. Rosin is not soluble in water or in honey; and if you took pains to wash out your new cans it is hardly possible that your honey could have been tainted by any flavor of rosin.—ED.]

## LITTLE DANGER OF GIVING BEES TOO MUCH CARE.

In regard to what Wesley Foster says, page 442, July 15, I do not think any large bee-keeper will go to the extreme in disturbing the brood-nest. Among the small bee-keepers, most do too little instead of too much; and if they see an article like Mr. Foster's they will say, "I know enough to leave bees alone and let nature take her own course without any bee-journal to help me." About nature's way, she will grow more weeds than corn. It is natural for chickens to lay only

in the spring. We find the conditions under which they lay, and produce those conditions at other times of the year to our profit. Naturally bees do the best work just after swarming; and will any bee-keeper dispute the fact that it will not pay to have your colonies in condition so that you can produce the same effect on them that swarming would just as the honey-flow commences? I have made many mistakes, and lost queens as Mr. Foster describes; but I have learned enough to pay for all of them. He that makes no mistakes does nothing." ALBERT I. MILLS.

Ignacio, Cal., July 31.

## THE BEST WAY TO ITALIANIZE AN APIARY OF FIFTY COLONIES.

I have been considering the best way of requeening my apiary of fifty hives so as to have all Italians. The following plan appeals to me very strongly, but I should like to have the opinion of some one more experienced.

After getting a number of cells ripe, take the first hive in the row, set it aside off its bottom-board and set an empty body there instead. Shake the bees off two or three of the frames of brood back into the old hive, placing the beeless brood in the empty hive-body on the old stand, and between two of the brood-combs place a ripe cell in a West protector. Over the hive-body on the old stand put a queen-excluding or honey board, and over that the old hive and bees. After the young queen has hatched and mated, shake the bees off the frames in the upper story, making them go down through the honey-board, thus trapping the old queen, which can then be disposed of. Will the nucleus under the old hive be protected by the bees above? and do you think the bees will treat the young queen fairly?

Jerry City, O., Aug. 17.

S. E. JONES.

[The plan you refer to would probably work only during the height of the honey-flow. The bees from the lower hive would probably go up in the upper story, and either destroy the queen-cell or kill the virgin after she hatched. It would be much more practicable for you to form nuclei on separate stands if you desire to raise virgins. While you can find the old queen by shaking the bees in such a way that they all have to pass through a zinc, it would be much easier and simpler for you to hunt her out on the combs, and destroy her, than to stir up the whole colony needlessly.—ED.]

## WHAT DOES A QUEEN-BREEDER DO WITH QUEENS THAT ARE INFERIOR?

What does a queen-breeder do with queens that do not come up to requirements when tested? Do they sell them as untested?

Pernlack, Pa., July 21.

W. V. PATTON.

[Any queen that fails to come up to the standard, of course can not be sent out as regular stock. So far as we know, queen-breeders pinch the heads of all such stock. It does not pay, as a general thing, to advertise cheap or defective queens.—ED.]

## TRAPPING ROBBERS AND MAKING A COLONY OF THEM.

We were greatly annoyed by robbers three years ago from neighboring hives, p. 488, Aug. 15. We used the bee-escape reversed at the entrance of a brood-chamber filled with two combs of honey, and the remainder drawn combs. By the evening of the second day we had about all the robbers in our vicinity snugly tucked away. They were removed in the evening and given a queen. After several weeks they were returned, given two more combs of honey, and fed. They built up nicely, and went into winter quarters as strong as any of our older colonies.

North Detroit, Mich., Aug. 26.

C. C. SCHNEIDER.

## RUBBER-ROOFING COVERS FOR HIVES, WHICH CAN BE PACKED AWAY IN THE FLAT DURING WARM WEATHER.

I am using for spring and late fall, as a protection to my hives, pieces of carpet or sacks over which I place a cover of one-ply rubber roofing. I cut the length to come down even with the width on the sides of my eight-frame hive. The ends are carefully folded in, and two holes punched for a cord to hold them in place. When not in use, the cord is untied and left in one hole, and the cover laid flat so they can be packed away for another season. The cost is about ten cents each.

Duluth, Minn., March 1.

J. KIMBALL.

# ITALIAN VIRGINS PURELY MATED ALTHOUGH HYBRID DRONES PREDOMINATE; WHY SHOULD THE STRONG COLONIES LOSE SO MANY BEES OVER NIGHT?

I recently purchased three virgins and succeeded in getting them mated and introduced into strong colonies. All three were purely mated, although there were only nine Italian colonies producing drones out of 110 colonies of mixed bees within two miles of my yard. I have the only Italian bees, with the exception of two colonies, within four miles of the yard.

I had one eight-frame colony with six combs of drone brood from laying workers. I do not know how long the bees had been queenless, but they had a good many cells containing from five to ten eggs each. I put a ripe queen-cell in this hive, and, later, when the queen commenced to lay, the workers kept laying too. I moved the hive, first catching the queen, and took the queen and the bees that adhered to the cover, and put them on a little patch of brood taken from another hive, and put all in a new hive on the old stand. This was in the evening. The next day I moved the old hive three times, and got about all the field force back to the old stand. Two days afterward I shook the old combs in front of the old stand, but first gave the new queen two combs of worker brood. The laying workers then stopped laying. I first tried shaking all the bees in front of the other hive, after first moving it 30 yards away, but the laying workers went right back to the old stand. Is there a better way to get rid of laying workers? If I take a comb of bees from a laying-worker colony and put it in another hive, the bees are nearly all killed.

Buckwheat has been yielding here a little for ten days. My very strongest colonies are losing about a handful of bees every night. I find the bees on the alighting-board early in the morning. The nights have been quite cool, but I hardly think the bees got chilled. Both the bees and brood are perfectly healthy so far as I can tell; but about half of the dead bees look as if they had fallen off the cluster and died, while the other half are a little curved, with their tongues extended, with no signs of being stung. My smaller colonies are not losing any bees at night. The number of bees lost by the strong colonies is greater than would be lost in a whole month of cold weather as a rule. The colonies that are so strong that the bees hang below the frames to the bottom-board are the heavy losers. The strong colonies are provided with supers. Two of my colonies that were without laying queens for five weeks, but that have young bees hatching now, lose scarcely a bee at night, so far as I can see, so it does not look as though the trouble were simply due to old age.

## THE FLOUR METHOD OF INTRODUCING.

I introduced two queens by the flour method mentioned by Mr. Gray, page 231, April 15, and both were accepted. I let the queens loose among the bees in less than five minutes after the old queen had been removed. I should be glad to see reports from others who have tried this flour method of introducing, in order that we may tell whether it is always successful.

Vincent, Ohio.

W. S. BASIN.

[In our opinion you went to a great deal of unnecessary work to get rid of laying workers. When you gave the cell, and a young queen hatched and began to lay soon after, you did the thing that eliminated the nuisance. All your moving of the hive and shaking of the combs subsequently, *probably* had no further effect. You say that the laying workers kept on laying after the queen began to lay. In this we believe you are possibly mistaken. The eggs of the laying workers might remain in the hive for some time, because the colony has been in a demoralized state. In the mean time the real queen began laying, and it would be impossible for you to know whether the laying workers kept on after the real queen began her work.

In getting rid of the fertile workers it is a good thing to give them a ripe cell, just as you did. If the virgin, when she hatches, is destroyed or fails to lay, the next step is to move the hive off its old stand to another location. Secure some good brood in all stages and some young bees from some good normal colony; put them in a hive and place the same on the stand from which the fertile workers were removed. Now give them a ripe cell. In 24 hours after, the flying bees of the laying-worker hive will have gone back to their old stand. Scatter what brood and bees that are left among other strong colonies—that is, provided any worker brood was on the combs. If not, you might as well melt up the combs and shake the bees into some colony after giving both lots a good shaking to prevent fighting.

Regarding the bees that you found dying off in front of the strong colonies, Mr. Doolittle explains this by saying that these are the superannuated bees that either of their own volition go to the outer edges of the hive or outside of the hive, or are forced to do so by the younger bees that seem to have practical control. In referring the matter to our Mr. Bain, he says he has seen the same thing at our home yard, and he also says that old bees were probably dying off among your weaker colonies; but as the number was relatively smaller you did not observe them.

We should be glad to get reports from others who have tried the flour method of introduction.—ED.]

## SHOULD EXCLUDERS BE USED? WHERE TO LOCATE THE EMPTY SUPERS.

Doolittle says, p. 379, June 15, that if he were running a yard for extracted honey he would simply add story after story of empty combs to control swarming and do nothing else. What I wish to know is, 1. Would he use a queen-excluder or allow the queen to go where she liked? 2. When the first story is occupied by the bees would he put a second story on top of it or under it? R. R. RABB.

Poltimore, Que., Aug. 16.

[Mr. Doolittle replies:]

1. When a ten-frame L. hive is used, it is a rare thing that more than one hive is needed by any queen, and for this reason it is better to use an excluder over the one ten-frame brood-chamber. With extremely prolific queens it might be well to use two such hives for the brood-chamber, and the excluder over the two. In no case would I allow the queen to scatter brood through all the combs in a two, three, four or five story hive, as brood is a nuisance in any comb which is to be put in an extractor.

2. I prefer to put all supers of combs at the top.

G. M. DOOLITTLE.

## THE COW PEA A GOOD HONEY-PLANT THOUGH A SHORT BLOOMER.

In reply to Mr. C. W. Barr, p. 413, July 1, I will say that there is no finer honey-plant than the cow pea while it lasts, but it blooms only about a week. During this time, if the weather is fair, the bees swarm over the fields "from early morn till dew eve." As a feed for stock it is second to none. I have grown no other hay for many years. We feed it either in the green stage or cured, and all kinds of stock eat it greedily either way.

There are several varieties. I grow what is called the Whippoorwill, as it is easier to handle when made into hay, on account of its bunchy growth — 'oes not make much vine. Some of them, like the large black, make long runners, and are difficult to mow or handle after cutting.

I do not know how this plant would do in Kansas, but would advise Mr. Barr to experiment on a small scale at first. It is too late to plant them this season, any way. The bulk of the crop is planted in June in this locality.

Tupelo, Miss., July 12.

J. D. ROWAN.

## THE COW PEA OFTEN AN ABUNDANT HONEY-YIELDER.

When a full crop is made here the cow pea is one of our most abundant sources of honey for late summer. The crop is planted here from May 1st to August 1st, and furnishes nectar through a considerable period of otherwise scarcity. Unlike all other plants, the stems and not the blossom secrete the nectar as the young pods are forming. These the bees work on excessively. The honey is of good body, thick, deep, approaching dark yellow in color, and of strong taste like that of poplar or tulip, only stronger, with a somewhat slight wild green-bean-like flavor.

Hollis, N. C., Aug. 17.

C. C. GETTYS.

## HONEY DUE INSTEAD OF HONEY-DEW.

I see in GLEANINGS, under "Honey-crop Conditions," this:

I shall have an average crop of honey-dew this season.

GEO. S. HURLBUT.

I intended to say on my postal, p. 511, Aug. 15, that I should have an average crop of honey *due*, more on account of strong colonies than the season. I do not think there was any honey-dew to speak of gathered in this locality.

Batavia, N. Y., Aug. 20.

G. S. HURLBUT.



# OUR HOMES

By A. I. Root

Take heed that ye despise not one of these little ones; for I say unto you that in heaven their angels do always behold the face of my Father which is in heaven. —MATT. 18:10.

I hope, friends, you will excuse me if I do start out so many of my Home papers with something about chickens, especially little ones. Chickens inside of the egg as well as outside are not only my hobby but they are my joy and delight. I do not know that I have ever had a happier time in my life than I am having just now; but it all clusters around and seems to hang on to the wonderful development of animal life as seen in the incubation of an egg; and I have felt these sudden calls so often at different periods all through my life that I have begun to think it is the voice of the great Father directing and guiding me, and indicating, as it would seem, that he wants me to explore, for the time being, certain features of his wonderful handiwork. I am interested in astronomy, and I rejoice and feel happy to learn that the intrepid explorer Cook has just planted our flag on the tip end of the real north pole. If Perry gets there he will find that the great feat has been accomplished. When I heard of it, I said if there was another spot on this whole wide earth that has not as yet been explored, the genius of the present age will search it out and find what it has to offer. It was a wonderful and a thrilling thought when he said he was finally at a point where there was no *north, east, nor west*. Whichever way he turned his gaze it was all south and *only* south. The successful outcome of the flying-machine trials, just now also thrill my very soul. But I turn again, after reading accounts of it, to my incubator, poultry books and journals, and a great heap of agricultural papers at my side. Just now a little more about the chickens.

I delight to see a chick break its shell away and push out into this wonderful world. He is very easily frightened, as I have learned when I try to move him to where there is a little more air than he finds in the close incubator. But he and I soon get to be excellent friends. I have a little nursery connected with my incubator where the chick can rest against a copper boiler where the water inside is exactly 111°. This temperature seems to suit him, especially if he can have plenty of air to breathe while he is drying off his plumage. In a little time he learns to be glad to see me; puts out his head, and tries to climb out over his little fence. When a little over 24 hours old I can teach him to climb out and trust himself to the tender mercies of my hand. As he steps out and indicates by his actions and voice that he is willing to trust me, and believes I am his friend, he utters that beautiful little chirp or caution. He says, in his baby-chicken language, "Now please be very gentle and careful with me, because I am so very little and so new;" and when I put my other hand

over him to keep him warm, and screen him from the strong light and the sudden outdoor air, he is such a picture of helpless infancy that it really touches my heart, because it is full of love for that little speck of life just handed out from the great Father. All the chick wants now is to be kept warm, have plenty of air, and, a little later, something to eat and some fresh water to drink. I could sit by the hour and watch the wonderful and rapid development of so much strength of body and intelligence, and the development of that something which we call "instinct." He wants to sleep quite a little, and he wants a nice, warm, and comfortable place in which to sleep. Every time he wakes up he has grown and developed a little. Pretty soon he begins to rejoice that he has life. His first expression of thanks to the great Father—at least I understand it so—is to stand up and to try to flop his little wings. Then he begins to act playful. He will pick at the little toes of the other chicks, and may be give them a dig in the eyes. When only three or four days old he will begin to show off some playful tricks—may be make believe that he is frightened, and lie down flat, pretending some enemy is in sight. No, I am not mistaken. Chickens do a lot of *pretending*. They will bristle up and pretend to fight. They start out and run a piece, and then come back. One strong lusty chick that was hatched in the incubator was so full of life and animation that he ran away one morning before he was a week old, and went clear past the factory, and was brought in by one of the children from near the railroad track. He got to cutting up so many antics that he forgot himself, and even forgot where the brooder was located. This is all I have to say about chickens just now.

A few days ago an assistant engineer, a son of the stenographer who is taking down these notes, gave me a clipping from one of our daily papers.\*

It told about an institution they have in the great city of Cleveland for the care of babies—not only motherless ones, but babies who have mothers who are obliged to work for a living. This institution will keep any baby, and care for it with the best up-to-date methods from morning till night, for the small sum of five cents. The baby is washed and fed, and if its clothing seems to be soiled it is washed and mended and ironed in an up-to-date laundry, so that the mother, when she comes for her baby at night, will find it in much better trim than when she left it in the morning. Not only this, the children are given the very best milk obtainable; and

\*I presume my good young friend A. X. Root was so much taken up with that newspaper clipping about the babies because he has a fine bright boy of his own, named Wayne, after Wayne B. Wheeler, of the Anti-saloon League. In fact, he sent me a picture of the boy, which he took himself when I was in Florida. And right here is the most important point. This young man, when he became a *father*, was at once interested in *all* the babies, not only in the great cities but in the whole wide world. I wonder if the time will ever come when no one can vote on certain matters until he is *himself* a father.

they have suitable playthings, and their education commences with the best up-to-date methods. Good trained women who love babies have the care of them. Now, this is not all. The mothers are questioned and instructed in the best methods of caring for the health and manners of the little ones. Not only this, but during the very hot weather of the past season competent trained nurses have been employed by the city to go about among the mothers and instruct these same mothers in regard to the very best and latest methods of preventing sickness and death during the heated period. Just a few years ago not only hundreds but thousands of babies died every summer, especially in the densely populated cities of our land, from a lack of proper food, fresh air, and sensible protection from the depressing influences of our hottest summer weather. Great sums are now being expended in every large city of our land in providing parks where the babies and older children may be taken for their health during the summer time. What a glorious work this is! Like the chickens (begging your pardon for going back to the chickens again), after they have come into the world they have in times past been dying by the score! The fathers and mothers mourn their loss, but seem to think it could not have been helped. Now, thank God, this great nation of ours proposes to stop letting babies die when a little money judiciously spent might prevent this sickness and death. May God be praised for this Christian work. Caring for the babies is a kind of religion that *everybody* believes in. May the Lord be praised when such *practical* Christianity is now taking the place of senseless discussions in regard to theological differences. It is not alone the mothers in our large cities that are being instructed, but through our excellent home journals the mothers on every farm and in every little village are being taught the best methods of keeping the babies well and happy.

When we returned from Florida last spring the baby in our home was having trouble from indigestion. This particular baby had some *relatives* besides her grandmother and grandfather. They did not propose that she should suffer from lack of any thing that could well be obtained. A cow was purchased, partly for her special benefit. Our "Wise" doctor directed how the cow should be fed and managed. The stable was to be ventilated—well, something as we ventilate our best up-to-date poultry-houses just now. The man who milked the cow was to wash his hands with sal soda and water before he proceeded to do the milking. A veterinary surgeon examined the cow's pulse and made her put out her tongue to see if she was in good health. May be I have not got it exactly right, for I did not see it. But he pronounced the cow in good health. A certain portion of lime water was added to the baby's milk, and she just *jumped right up* in health. They weighed her every Monday morning for quite a spell to see how many ounces she had gained. I can not remember now about

the *avoidsupois*, but I shall always remember her bright smile and her crow of delight whenever her grandfather came in sight. I watched her growth and development just as I have watched the chickens. She has grown so in intelligence as well as muscle that she is saucy and "bossy," especially whenever her grandpa comes around. They give her her milk at stated hours; but she is getting so now that she is aware when it is pretty near time for her ration, and she pretty nearly raises the roof off the house by her good-natured shriek. She does not get cross and cry; on the contrary, she laughs while she is using her lungs to send forth peal after peal that almost prevents one from thinking, let alone talking, until she can get the "bottle" in her hands. There is no more smile then until she has tipped it up and exhausted its contents. After she has been fed, then she will talk and show off her tricks.

Now, I have gone into this lengthy detail just to show you that a baby that cries, perhaps a good part of the day because it is suffering and in pain, may be transformed into one of the happiest and most joyous babies you ever saw by simply looking after a few necessary things. This baby sleeps alone, and always has, so far as I know, either out in the open air or in a bay window which is practically open air. She is now eight months old. She has never even tasted any candy nor any thing of that sort; and I do not know that she would have ever tasted any thing but her milk had not her *grandpa* given her a Battle Creek graham cracker when she had two teeth to bite into it a little. Let us now go back to our text.

Is not this work we have just been discussing right along in the line of our text? We have finished our discussion in regard to what happens immediately after death; but does not this verse at the head of my talk to-day seem to indicate that these little ones are *with God* the great Father from the time they leave their earthly home away down into the great future? Perhaps it is not possible to decide that matter just here; but we know this: That God *must* be pleased, and that the angels in heaven are pleased, to see us protecting and caring for the children. There are better schoolhouses for the little ones now than ever before. The great kindergarten work has been taken up and carried forward since the time that I can remember clearly. Better food is provided for children; and I hope the fashion of giving them candy and cake and sweetmeats all through the day is being done away with. I can remember the time when I saw a near neighbor of ours give a baby whisky and milk in a teaspoon; and then they all laughed to see the baby make faces. It used to be the fashion to give the baby *every thing*; then people wondered why so many of them sickened and died suddenly. I think it was in yesterday's paper that I saw an account of a baby that crawled under a cupboard and got hold of a cracker on which strychnine had been placed to poison rats and mice. The



doctors did all they could to save the innocent child's life, but in vain. How that poor mother must have felt when she realized that her own stupidity and carelessness had robbed her home of its very life. If we have not already laws to protect the children we ought to have some very stringent ones made against the careless and indiscriminate use of poisons. It is a terrible thing to lose a child in this way; but, my dear friends, let us consider in closing that such a death is not to be compared with letting the child grow up to fill a drunkard's grave or to go down into a death of shame.

Fear not them which kill the body, but are not able to kill the soul; but rather fear him which is able to destroy both soul and body in hell.

With the disappearance of the saloons, not only from our own land but from every nation in the world, will come better care and protection for all babies and all childhood. Even now we have records of drunken fathers killing their helpless children. Where the father permits his children to die for want of food and clothing because of his intemperate habits, the daily papers have but little or nothing to say about it; but there is no doubt that hundreds of children are having nourishing food just now that did not have it and could not get it when saloons cursed our land; and more children are going to day school and Sunday-schools, where the saloon has been voted out, than ever before.

Now there is another point in regard to the poor little babies that I have not touched on. (Excuse me for using the chickens again as an illustration.) The poultry-journals and the agricultural papers tell us there is a lot of trouble with the young chicks during the first week or ten days, and we do not seem to be able to get hold of the cause. It is not only incubator chicks but those hatched under hens. If we can get them through the first ten days our troubles are mostly over. This is not all. Hundreds and thousands and perhaps hundreds of thousands of chicks "go dead in the shell." This means that they mature all right, seem to be perfectly formed, but die just before exclusion. Our experiment stations and the Department of Agriculture suggest that one great cause of these infantile deaths (I am talking about chickens now) is a lack of *vigor and vitality*; and as a remedy they suggest stronger and more vigorous parents for the baby chicks. The open-air cure comes in right here. Parents reared on our farms, having the run of the fields, and roosting at night in open-front roosts, or, better still, in trees (*chickens*, mind you), with plenty of nourishing food, will give good healthy eggs and great vitality; and this, they think, is the largest factor in enabling the chicks to burst out of the shell and get a start in life just the way the 13 did I tell you about in another column.

Let us now apply this same doctrine or philosophy to the babies. The parents should be in the best possible state of health. I say, and our best physicians are saying it with me, that all parents, if possible, should

sleep outdoors. The mother should have plenty of the most nourishing food, and she should have a sufficient variety of it. She should not be overworked nor worried. Great heavens! think of obliging a prospective mother to go on scant rations because of a drunken husband! Then think of her being worried and hurried and *overworked* at this critical time while the money her companion in life earns is going to the brewer instead of buying food and clothing for the children. God help us to think of *the mothers* while we *redouble* our efforts and zeal to stamp out the saloon. I read somewhere that three different industries are injured by voting towns and counties dry. First, the saloon-keeper is thrown out of employment; next the undertaker does not have enough to do to pay expenses; and last, but not least, there is a terrible dearth of washerwomen. Women who used to take in washing do not need to do it any more, because the husband brings home his savings. Oh! these are facts. Go and ask the people in any neighborhood where they used to have saloons and see if I am not right.

Some periodical said a short time ago that neither the Department of Agriculture nor any other department in the government had turned a bit of attention toward caring for humanity in the same way that they devoted *volumes* to the care and well-being of horses, cattle, pigs, and chickens. The human form divine, the babies created by God's own hand, and created in his own image, are not worthy of a single leaflet or bulletin. I hope this is not true. The Chinese have been in the habit of worshiping their *ancestors* for ages past. Suppose we of this present century turn about and pay a little more attention in the way of reverence and respect and kindly care for *the mothers* of the babies; and I hope the fathers of our land, at least, are doing so.

While I think of it, let me say that one of the brightest and prettiest specimens of babyhood that I ever saw in all my life is now sleeping out of doors; and the father and mother of this baby have been sleeping out of doors for years past, winter and summer, with but few exceptions, and the whole *precious three* live less than a thousand miles (?) from my own home. Chickens are all right, and so are horses and cattle, and every thing else on the farm; but, oh dear me! what do they all amount to compared with the human form divine, *in embryo*? "Ye are of more value than many sparrows"—or many *chickens*.

I omitted to mention one feature of the good that comes from having trained nurses visit the homes in the crowded cities. Great numbers of women are coming to our land from foreign countries. Many of them do not speak our language; and Christian women who undertake to do missionary work in these localities have often much trouble in gaining access to the homes of these foreigners. They are suspicious of our people and suspicious of our religion. But when the missionary woman is also a trained nurse

and comes in to help the sick baby, and explain to the poor mother what has probably made the little one sick, they find an open door to the mother's heart. Our missionaries tell us that in foreign lands nothing wins the heart of the stranger like the ability to *heal the sick*. When they see the little bodies made well and strong, *then* they are willing to listen to the words of the Savior, "In heaven their angels do always behold the face of their Father which is in heaven."

Some of us have money that we would like to invest where it would be perfectly safe, and bring us at least a moderate interest; and I think, too, we have considered placing it where it will *do good*. Now just consider a moment the dear Savior's words when he said, "Lay not up for yourselves treasures on earth, where moth and rust doth corrupt, and where thieves break through and steal; but lay up for yourselves treasures in heaven, where moth and rust doth not corrupt, and where thieves do not break through nor steal." Now, then, is there any better or surer way of laying up "treasures in heaven" than by investing it in these institutions that care for babies? In the great city of Cleveland there have been during the past summer seven different asylums for babies; and, so far as I can gather, they are supported and kept up by contributions from good people who not only love babies but God and their fellow-men. Haven't you, my friends, a little something to deposit or *invest* in this sort of *practical Christianity*?

## HIGH-PRESSURE GARDENING

By A. I. Root

### THE "WONDERFUL" WONDERBERRY.

Well, friends, I have a "wonderful" story to tell you; but I do not believe I can tell it all this morning, because we have not yet got down to the bottom of this wonder of wonders. We will start in with the following letter:

I see you want reports from those who have tried the wonderberry. Some of my neighbors tried it, and I have one vine (stalk or weed), and I find it what we call nightshade here. The nightshade grows "in any old place" where it can get a chance.

Sonora, Ky., Aug. 28.

T. PHELPS.

Accompanying the above letter was a box of berries shipped with the stems, leaves, etc. With the same box with the wonderberries was a plant labeled "nightshade." I think the label said it grew out by the *hog-pen*. Well, we were unable to distinguish any difference whatever between the nightshade and the wonderberry; but I took them over to Mrs. Root and she made sauce of them, adding a little sugar. There were differences of opinion in regard to the fruits. But I liked them pretty well, and ate the whole of them to see whether I would get "pizenized" or not. My decision then was, that, where fruit is scarce, they might be

used to a considerable extent by people who like them.

A day or two afterward I received another box of berries labeled "wonderberry." As soon as I opened the box I uttered an exclamation of surprise and pleasure. They were twice as large as the former lot, and of a beautiful glittering steel blue. I began to wonder if very rich soil and excellent cultivation could make so much difference in the fruit of the plant. Some of these last ones were nearly as large as small cherries. They were shaped so much like a potato-ball that I remarked that the green ones looked very much like small-sized potato-balls; and when I ate the beautiful-looking berries they also *tasted* like potato-balls. And, by the way, I have frequently tasted potato-balls, and wondered if they might not sometimes be developed into something like a tomato that might be cooked, provided they were not fit to eat raw. I took these over to Mrs. Root, and she cooked them as before; and my verdict was that they are a beautiful fruit when cooked. She did not quite agree with me, and neither did the children in the different homes in Rootville. Here is what our good friend Nydegger says about them:

#### WONDERBERRY, ETC.

Mr. Root:—In GLEANINGS for August 15 I noted your comment on Luther Burbank's wonderberry. For that reason I am sending you a little boxful so you can see them for yourself and make a report on them. These were grown here in Danville at the Soldiers' Home. This noon we had some cakes made of these berries, and they were very good. I will plant some myself next year. The plants are rather large, with many large branches which hang very full of berries. They are also very beautiful in appearance.

Danville, Ill., Aug. 30.

JOHN NYDEGGER.

Well, while we were discussing these *larger* wonderberries Mrs. Root said, "Why, I have seen those very same berries growing somewhere around here in our own doorway. It must have been out in the weeds somewhere, I think."

I replied, "Why, no, Sue; you can not have seen these berries growing here. It was up in the woods in Michigan where you saw them growing around our cabin."

But she stoutly maintained that she had seen them within a few days. After dinner I went out into the greenhouse to get some ripe tomatoes; and over beyond the tomato-vines I was startled to see some large beautiful clusters of wonderberries *exactly* like those big ones in the last box. And now comes another wonder.

Some four or five years ago I saw in Miss Mary Martin's seed catalog, Floral Park, N. Y., a description of the "kudzu" vine, or, as it was called, "Jack's beanstalk." It sends up vines so as to cover a summer-house in one season. It makes a growth of 30 ft. in one year, etc. Well, I had good luck with the kudzu seeds. Apparently every one of them grew. As they were such a rarity I put them in little pots, and when children's day came I carried toward a hundred potted plants to the Sunday-school and gave them away to whoever would promise to care for them. I was greatly disgusted, however, later in the season, to find that the



kudzu did not seem to be a *vine* at all. It just grew up as tall as a tomato and bore berries. Several asked me if the berries were fit to eat. I told them that, as the catalog said nothing about their being fit for food, they might be poisonous. Since that time, for several years, they have come up in the greenhouse and other places, and have borne these same berries. Now how could Luther Burbank be so busy in *creating* (?) this new creation if it was already fully created, and offered for sale by Miss Mary Martin (close by John Lewis Childs' place, mind you) four or five years ago? A few days later Mr. Stephen N. Green, now connected with our Ohio Experiment Station at Wooster, looked at my wonderberry, and declared that it was the old *garden huckleberry*. At the time I purchased the kudzu seed I also bought seeds of the garden huckleberry, but did not succeed in raising any plants. Either she or I got the seeds mixed.

Well, another "wonder" struck me when our stenographer who is taking down these notes informed me they had some "huckleberry pie" for dinner yesterday made out of these same huckleberries that came from a neighbor's garden next door. While I think of it, the juice of the fruit, after it is made into a pie, has the brightest and most beautiful rich purple color, outstripping the old-fashioned huckleberry entirely. Who was that chap the boys were laughing at who could not eat huckleberry pie without getting his ears "mussed up"? If he were to tackle a wonderberry pie you could see him almost a mile off on account of its striking color.

The *Rural New-Yorker* recently declared that the wonderberry and huckleberry are *not exactly* one and the same thing, and added further that the garden huckleberry is the better fruit of the two, which I heartily indorse; and the *Rural* rather seems to have brought to light also the fact that a good many people received the garden huckleberry when they sent to Childs for the wonderberry. Come to think of it, there are quite a number of other fruits that have an unpleasant flavor when eaten raw but are very nice when cooked. Mrs. Root suggested, as an example, the black English currants. Nobody ever wants to eat them raw; but both of us think they are ahead of any other berry for puddings, pies, etc., especially when canned and used in winter. While I am about it I also want to call attention to the fact that, several years ago, a seedsman advertised seeds not only of peach, pear, and cherry tomatoes, but currant tomatoes—tomatoes that were borne in great profusion, not much larger than large currants; and these currant tomatoes came very close in appearance to our new wonderberry. And, by the way, if Luther Burbank does not get mad and quit, will he not turn his attention to developing a potato-ball that is good to eat? then we can have potatoes under ground and fruit on top of the vines. Here is something that would indicate what the wonderberry may do in South Dakota:

#### CHILDS' AND BURBANK'S "WONDERBERRY."

You ask for the experience of those who have tried the wonderberry. We are among the number. Having paid 20 cts. for about a dozen seeds, we called it the "wonderful wonderberry," and made all sorts of sport of it. We "roasted" Childs, and clapped our hands when the farm papers helped us in the roasting process. But in the past two weeks we are ready to *stand back of all that Childs said* concerning it. It truly is a "wonderful plant." Ours stand three feet high and six in diameter, and are loaded with berries as large as blueberries, and the pies made from them are equal to the best blueberry pie we ever ate, and we are not alone in this expression. Don't condemn Childs yet. Mrs. Peck is canning several quarts now. We think it has a future. C. M. PECK.

Mt. Vernon, S. D., Aug. 31.

And here is another letter in its favor, from Illinois:

#### GOOD FOR PIES, ANY WAY.

I desire to say I have raised and fruited over 200 wonderberry plants, and that we find them all right. Let them get ripe and they will make an excellent pie. They can not be judged by tasting them before cooking. We make the pies the same as blackberry pies, and the fruit is not hard to pick, as we do it. Allow a whole bush to get ripe (they hang on well), then clip the bush off at the ground with a knife or pruning-shears; turn it bottom side up over a wash-tub, and strip them off, letting them fall into the tub. Try them. Greenfield, Ill., Sept. 3. W. G. SECOR.

In conclusion, I am very glad indeed to get these favorable reports from the new berry that has been pushed all over the world, as it would seem; but I am sorry that Burbank and Childs have lent themselves to the scheme of making us believe that it was a new creation when the whole wide world had it already but was not "sensible of the fact." That is what the Irishman said of the turtle that would not die, even if somebody had cut off its head. He declared, "The crayther is dead, sure enough, but he does not seem to be as yet *sensible of the fact*."

*Later*.—I have just been up to the neighbor's garden mentioned, and found a row of plants bearing berries, some specimens of which were  $\frac{1}{8}$  of an inch in diameter, or about as large as a good-sized grape. The plant branches out rather more than a tomato, and the leaves are almost exactly like what is known as the potato-leaf tomato. As with some other plants, they are troubled a good deal by a flea beetle. I am informed they use Paris green to destroy the pests. I would suggest hellebore as a better and safer remedy. The fruit is borne in bunches or clusters, and present a very handsome appearance. The shape is very much like that of a potato-ball.

After the above was dictated I made a careful search in a drawer adjoining our greenhouse, and succeeded in finding the envelope that must have contained seeds of the garden huckleberry which I planted in the greenhouse in the spring of 1905. On it we read as follows:

#### GARDEN HUCKLEBERRY. (*Solanum Nigrum*.)

A new fruit from Washington State, and most desirable introduction of late years; will outyield any other berry grown. Grows from seed, and ripens its crop same year. Berries jet black, four times the size of huckleberries. For pies or jams it is the equal of any other fruit grown. Plant same as tomato in box or pan, and, when danger of frost is over, set out 2 x 4 feet. When jet black, stew thirty minutes; make very sweet. Better than wild huckleberries for pies, jams, jellies, sauce, and canning. This new fruit is insect-

proof. A light frost improves the fruit. Packet, 100 seeds, 10 cts. MISS MARY E. MARTIN.  
Floral Park, New York.

The fruit itself is insect-proof, so far as I know; but the leaves of the plant are not so by any means. Miss Martin does not claim any thing for the fruit, as you will see, except when it is *cooked*; and, so far as I can see, her claims are not extravagant. The seed was labeled, as you will notice, *Solanum nigrum*; and if I am correct the wonderberry is also *Solanum nigrum*. This being true, even if it is a good fruit for sauce and pies, where does the outcome place Childs and Burbank? To settle the matter, the *Rural New-Yorker* has appealed to the best authority in our land, and the following is the final sentence of the reply:

UNITED STATES DEPARTMENT OF AGRICULTURE.  
BUREAU OF PLANT INDUSTRY,  
WASHINGTON, D. C.  
OFFICE OF CHIEF OF BUREAU.

Mr. H. W. Collingwood, Editor *Rural New-Yorker*, New York City, N. Y.

Dear Mr. Collingwood:—I regard the wonderberry and garden huckleberry as variants or horticultural varieties of the black nightshade, or *Solanum nigrum*, and as such may have some value in the dry hot sections of the Southwest, where, I am informed, identical forms have been grown in back yards and gardens for years.

Very sincerely,

Aug. 18. B. T. GALLWAY.

THE WONDERBERRY—STILL MORE IN FAVOR OF IT.

From the seed received from Childs I raised about a hundred plants, of which I transplanted about thirty; and if I had had more room I would have planted still more. About the middle of July some of the berries began to ripen to a dark-blue color, the size of a nice large currant, and from three to six berries to the bunch. When I picked the first berries they were in full bloom; and as I write they are *still* in bloom, so that they are really ripening and blooming right along; and as for profit, I don't think there is another berry grown that can come up to its standard, for it is continually hanging full of berries. I have up to this time picked about 30 quarts, and can pick a great many more before hard frost kills them.

When raw they resemble in taste the elderberry somewhat, but are not so coarse-seeded; in fact, one will hardly notice the seeds at all. For canning, preserving, and pies, they are excellent, finely flavored, and can not be surpassed by any other berry. They contain hardly any acid, and consequently are a saving in sugar, for this berry does not need nearly as much as other berries to sweeten them. Profitable? Why, if I had one acre of these berries I could realize more from them than from any other; and I am positive that, if once introduced on the market, there would be a larger demand for these than for any other kind. Think how many plants would grow on one acre in rows three feet apart, the plants two feet apart, and then over one quart per plant, as mine turned out. Another advantage in its favor is that they do not require to be planted on rich soil, for they do the best on poor soil, the same as tomatoes. And still one more advantage is that, after being picked, they can be kept in crates or baskets for a week without spoiling. Do it with any other berry if you can.

Sandusky, O., Sept. 5.

WM. F. DANIEL.

\* Please notice that friend Phelps, in our first letter, calls his berry the wonderberry, and the berries he sent me in the box were genuine wonderberries, without question; but they are so *slightly* different from the wild nightshade that I was unable to detect any difference whatever. And notice again that John Nydegger, in the next letter, also calls them wonderberry; but the berries he sent were nearly if not quite twice a large, and I think, too, all will agree with me that the berries growing at the Soldiers' Home, as he mentions, were genuine garden huckleberries. I do not think there can be any mistake about it. This being true, it seems that we have abundant proof that Childs sent out garden huckleberries when he received orders for wonderberries; and he did a good thing, for, as the *Rural* states, it is much the better fruit of the two; and yet Childs declares he has had no garden huckleberries on his place for years.

## POULTRY DEPARTMENT

By A. I. ROOT.

THREE HUNDRED EGGS A YEAR FROM EACH HEN; ONLY HALF THE FEED REQUIRED FOR LEGHORNS; PULLETS SOMETIMES COMMENCE TO LAY WHEN 3½ MONTHS OLD.

One of the readers of GLEANINGS recently sent me an advertisement that he says he clipped from the paper I have so strongly indorsed (because it shows up *humbugs*), and asks me what I think of it. Below is the advertisement, which appeared in the *Rural New-Yorker*:

BUTTERCUPS.—The new breed. Record—300 eggs per year. Circulars and prices sent with pleasure. J. S. DUMARESQ (Cato's Hall), Easton, Md.

When I wrote to Mr. Collingwood in regard to it he replied as follows:

Dear Friend Root:—As to these Buttercups, I did not like to run the advertisement, as it seems like a great story; yet the son of the woman who owns the farm came here, and was so evidently honest, and showed such strong statements and letters about the hens that we let it go. From what this man could tell me I judged that the hens are some well-selected strain of Hamburgs or some similar breed. I believe they are good ones, though the 300-egg yield is so far ahead of any thing we can make our Hope Farm hens do that I know not what to say. H. W. COLLINGWOOD.  
New York, August 12.

By writing for particulars I got a little circular from Mrs. Dumaresq. The circular states that the Buttercups were brought from the island of Sicily by the captain of a vessel who bought them to take the place of meat on board his ship; but they laid so many eggs (and kept right at it), that he did not have the heart to take their heads off, and so he brought them home. I think the woman who advertises them fully believes that they will lay 300 eggs in a year; but I can not learn that she has ever made an actual test with trap nest or otherwise. I should say it is almost impossible that all she claims for the Buttercups is true. For instance, in addition to the great number of eggs, we have this statement:

It does not require any more feed to keep in good condition twenty-five Buttercups than it does a dozen Leghorns, and if given free range they require no feeding except during winter months.

Now, added to the above we are told that pullets have commenced laying when only three and a half months old. The great point is that they excel every thing else known for eggs. While they are excellent for broilers they are not recommended for roasters. I am glad they do not claim *every* thing for them.

Well, I have given you the above as a text for a little sermon. Things of this kind are constantly coming up—new plants that will do wonderful things, as well as new animals; and hundreds and thousands who enjoy testing novelties rush off their money. I do not know that I blame friend Collingwood for accepting such an advertisement. We often



do the same thing after making careful inquiry; and, of course, the purchaser must make some allowance for the enthusiasm of the inventor or introducer of some new thing. What should be done is this, and I have urged it again and again: The Department of Agriculture at Washington, and the experiment stations of our different States, should have some man appointed to run over the agricultural papers, and promptly send for and test all of these new things; and people should be asked by the Department or station to hold on a little until these stations can give some kind of encouraging report. Let me illustrate:

Something over twenty years ago a man secured a patent on some sort of house-apiary. He was full of enthusiasm, and was going to sell every bee-keeper an individual right. Just as soon as the thing was advertised I visited the man, reported through GLEANINGS what I had seen, and cautioned the friends all over the United States to let me build a house-apiary and test the matter thoroughly before rushing into it or buying a right. In my experiments I invested several hundred dollars; promptly gave notice as to how it succeeded, and gave a prompt notice also in regard to the failures. In one year's time I said we wanted our hives outdoors where each hive could stand by itself so the owner could walk clear around it while caring for it. As a consequence, nobody, so far as I know, bought a right to make and use a house-apiary; well, the thing has so completely gone out of sight now that I can not even remember the inventor's name. Two or three house-apiaries were installed in my own neighborhood to convince me that such an apiary would give tons of honey, no matter what the season was; but if there is one left now it must be used as a chicken-coop. The owner had his houses painted all colors of the rainbow so the bees could find their own entrance. I know that for several years half a dozen or perhaps more were found who liked such house-apiaries, and kept on using them. If there is a man now in the whole United States who still uses and likes a house-apiary I wish he would hold up his hand. Let us now get back to the beautiful Buttercups.

They are thus named because the comb is something like a cup and saucer or a buttercup flower. I promptly sent \$4.00, and received for the same fifteen beautiful white eggs. They were put into the incubator the 30th of August; and I propose to take them (you see I am counting my chickens before they are hatched) down to Florida; if I can get them to laying in *three months* and a half from the time they are hatched (Providence permitting), you will all hear about it. Now, as I said, do not, any of you, invest in Buttercups until I report. The good lady who has them for sale will get a big free advertisement if they are all she claims. If I decide they are *not* all she claims, I am sure she will not feel hard toward me for working for the greatest good to the greatest number. By the way, I wish the friends would help

me in hunting up such things advertised in the way of bees, poultry, fruit, etc.

#### POULTRY-KEEPING IN SOUTH DAKOTA; CAN A WOMAN SUCCEED WITH POULTRY?

In my trips through South Dakota I have several times mentioned my good friend C. M. Peck, who for so many years was a Sunday-school missionary in that region. He has recently settled down on a farm a few miles out from the city of Mitchell, their county-seat; and he happened to say in a personal letter that his wife was having wonderful success with her chickens; that she had raised about 700 with very little loss. I at once wrote, asking if she used an incubator or raised her chickens under a hen. Below is his reply:

*Dear Friend A. J. Root:*—She set her incubator (100-egg) and some eight hens the first of February. When the chicks arrived, the incubator chicks were divided up among the eight hens to brood and care for along with their own. Then the incubator was set again along with other hens, and this was the program until she had over 700. She is saving all the pullets for winter eggs. The roosters have been sold for 23 to 25 cts. per lb., save home consumption (and this is great), and those we have on hand for later use. Our laying hens, we think, have done remarkably well. We have on an average 150 hens, and from Jan. 1 to July 1 we sold at the grocery \$202.52 worth, besides the eggs we used (and we lived on them for a time, it seemed to me), and the eggs used for hatching the 700 chicks. Poultry is helping out Vantage Farm in fine shape. Mt. Vernon, S. D., Aug. 31. C. M. PECK.

You will notice from the above that Mrs. Peck is using the incubator as an adjunct to sitting hens; and she makes those sitting hens take the place of a brooder—the plan I have been following and writing up during the past summer. Well, here is a letter from another good woman who has been working along the same line. I take great pleasure in giving these letters, because they may be an encouragement to others—*men* as well as women.

#### THE "NATURAL-HEN INCUBATOR;" INCUBATOR CHICKS, ETC.

*Mr. A. J. Root:*—By all means enlarge the poultry department in GLEANINGS, as you are *surely* doing a good work exposing frauds. I too was drawn in by the Natural-hen Incubator Company, and for my dollar I received a few plans on a sheet of paper which I never made any use of. That was several years ago. I only wish they had the plans and I the dollar. It would pay a year's subscription to GLEANINGS, which would be a thousand times better.

Now, your discovery concerning the giving of incubator chicks has also been mine. I have been giving them to new broody hens for about three seasons past, and never experienced very much trouble in the work. Simply place a couple of peeps under the to-be-adopted mother in the evening in her brood-nest, and next morning take her to a box preferably having one side knocked out, leaving a ground floor, and moving the box as the place gets soiled, thereby saving the scraping necessary to a clean healthy coop. In rainy weather I lay a board in so they may sit on it; but I place the box at an elevation if possible, so the water all drains out fast. I find this a very good plan.

I always grease my peeps every month or so, if in brooder; if with hens, I give the hens a triple dose, or more if possible, and she greases the babes at night.

I lose none with gapes, and very few in any other way since adopting this plan. I grease them with clean lard and a few drops of oil of sassafras added.

Oseola Mills, Pa., Sept. 3. SADIE S. THOMAS.  
And I too have lost no chicks for the last ten days—no more dead ones found in the morning.

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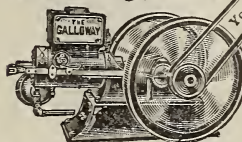
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**KITSLMAN BROS.,**  
Box 21, MUNCIE, IND.

## PATENTS

25 YEARS' PRACTICE.

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Second Nat'l Bank Bldg., WASHINGTON, D. C.

Patent Practice in Patent  
Office and Courts.

Patent Counsel of  
The A. I. Root Co.

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### BEE CULTURE—

Has been carried on for over fifteen years without a failure in the honey crop? Winter losses are reduced to a minimum? you can greatly increase your output of honey over the average of the Middle West?

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Orchards will return, according to age, \$200.00 to \$500.00 per acre yearly, NET. Apples, crab apples, cherries and plums, strawberries and small fruits, potatoes and truck, pay equally well.

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O. W. Kerr,  
131 La Salle  
Street,  
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Read of the economy and profit in this farmer's potato-digging,—how he gets every potato in the field,—how he avoids loss from scarred and crushed potatoes,—how he has made the work easy and fast.



## It Tells You how the Acme Hand Digger

### ATTACHMENT

proved out under hard, practical actual field use:

Potato Implement Co., Traverse City, Mich. Gentlemen—Two years ago I bought one of your Acme Hand Potato Diggers and after giving it a short trial in the field, my sons, who were digging the potatoes, were so pleased with the Acme Digger that I now have five in use on my farm.

The Acme is just the digger we needed. Unlike the machine diggers it digs clean, gets every potato in every hill, doesn't scar the stock, and is not bothered by the vines. The men work easily, yet quickly, and don't get so tired as with ordinary fork or hook digging.

I know from my own experience that the Acme Digger does better, easier and cheaper work than any other digger I have seen, and the best recommendation I can give anyone is that I continue to use it on my own farm.

I am, yours truly,  
F. LAUTNER, Leelanau County.

**Send \$1.00 Today.** Let the Acme Attachment *prove* itself to you. Let it prove that your dollar is better than \$100 investment in other diggers—that it will dig potatoes better and more economically—that it is the digger you have been waiting for. *Sent prepaid by express.* Money returned if you had rather have it than keep the digger.

Pamphlet and Potato Book free on request. Send now. Address Box 520,

Potato Implement Co., Traverse City, Mich.

## A WONDERFUL INVENTION



feet wide. Drawn by two medium horses. Jointed pole. Perfect centre draft. A labor saver. Send today for FREE Booklet. CUTAWAY HARROW CO., 308 Main St., Hingham, Ct.

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Is green bone fresh cut. Rich in protein and all other egg elements. Its egg producing value is four times that of grain. The eggs are more fertile, chicks more vigorous, fowls heavier. This makes green bone cheap food.

**Mann's Latest Model Bone Cutter.**

Cuts all bone, meat and gristle. Never clogs. 10 DAYS FREE TRIAL. No money in advance. Cat'g free.

F. W. MANN CO., Box 3 7, MILFORD, MASS.



**IDEAL ALUMINUM LEG BAND**

To Mark Chickens

**CHEAPEST AND BEST**

12 for 15c; 25—25c; 50—40c; 100—75c.

Sample Band Mailed for 2c Stamp.

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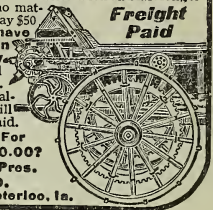
This is just a little ad—but a postal will bring my Big Book—and give you my \$50.00 Saving Price and Special Proposition. You can save as much answering this little advertisement as if it covered a page.

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1689 Galloway Stn. Waterloo, Ia.



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the world's greatest egg record, was made possible by following the advanced methods set forth in a new and exhaustive work on egg production, entitled

### How To Build Up a Heavy Laying Strain

Nothing like it has ever heretofore been published, and poultry keepers are universal in pronouncing it the standard authority on egg making. It covers the subject thoroughly and by following the advice given the flock of non-laying hens may be developed into heavy egg producers. Price 50c per copy, but for a short time will send the book and include a year's subscription to Poultry Monthly, the world's best poultry paper, all for 50c.

**Poultry Monthly Pub.Co.**  
SYRACUSE, N.Y.

## Queens by Return Mail.

We have a good stock of nice young laying queens ready to mail upon receipt of order, and would be pleased to supply your wants. Our queens are noted for their prolificness and honey-gathering qualities, being bred from the best honey-gatherers obtainable, and mated with **SELECTED DRONES**.

PRICES.			
Untested.....	\$ .75	6	12
Warranted.....	1.00	\$4.25	\$8.00
Tested.....	1.50	5.00	9.00
Select Tested.....	2.50		

If you wish select untested or select warranted queens, add 25c each, \$1.00 for six, or \$2.00 for 12, to the list price. All cash orders booked and filled in rotation. Price list upon application.

**W. W. CARY & SON, Lyonsville, Massachusetts.**

### MILLER'S SUPERIOR ITALIAN QUEENS

By return mail after June 1, or your money back: Northern bred from best red-clover working strains in U. S. No better hustlers; gentle, and winter excellent. Untested, from my three-banded *Superior Breeder*, \$1.00; six, \$5.00; 12, \$9.00. After July 1, 75c; six, \$4.00; 12, \$7.50. Special prices on 50 or more. Safe arrival and satisfaction guaranteed. Circular free.

ISAAC F. MILLER, Reynoldsville, Pa.

### Simmins' Pedigree Italian Queens

Warranted 6 months. See back of GLEANINGS, May 15 issue. Nothing like it in the bee-world.

Sam'l Simmins, Queenland, Heathfield, Sussex, England

### Golden and Red-clover Italian Queens

My queens are large and prolific. Their workers are hardy and good honey-gatherers. Give them a trial. Untested, one, \$1.00; six, \$5.00. Select untested, one, \$1.25; six, \$6.50. Select tested, \$2.00 each. All orders filled in rotation.

No nuclei or colonies for sale this season.

WM. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.

## QUEENS

of the Robey strain of 3-banded Italians during 1909. Warranted queens the remainder of the season, 60 cts. each in any quantity. Satisfaction, or money refunded.

L. H. ROBEY, Worthington, W. Va.

### Queens of

### Moore's Strain of Italians

Produce workers that fill the supers, and are not inclined to swarm. They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.

Mr. W. Z. Hutchinson, editor of the *Bee-keepers' Review*, Flint, Mich., says, "As workers, I have never seen them equalled. They seem possessed of a steady, quiet determination that enables them to lay up surplus ahead of others. Easier bees to handle I have never seen." My queens are all bred from my best long-tongued three-banded red-clover stock (no other race bred in my apiaries), and the cells are built in strong colonies well supplied with young bees.

Reduced prices: Untested queens, 75 cts. each; six, \$4.00; dozen, \$7.50. Select untested, \$1.00 each; six, \$5.00; dozen, \$9.00.

I am now sending queens by return mail.

Safe arrival and satisfaction guaranteed. Descriptive circular free. Address

J. P. Moore, queen-breeder, Rt. 1, Morgan, Ky.

### ITALIAN QUEENS By RETURN Mail

Red-clover and Goldens, 60 cts. each; guaranteed, 90 cts.; tested, \$1.15. See list. Leaflet "How to Introduce Queens," 15c; "Rapid Increase," 15c; copy of both, 25c.

E. E. MOTT, GLENWOOD, MICHIGAN

### GOLDEN - ADEL - QUEENS

Golden Italian and Leather-colored Italian, Imported Carniolan, and Caucasian queens. A full line of bee-keepers' supplies. Send for price list. Address

Chas. Mondeng, 160 Newton Av. N., Minneapolis, Minn

Every Bee-keeper Needs It

## QUEEN Fine, Standard-Bred 25 cts. WARRANTED ITALIAN



When taken with the American Bee Journal for One Year.

During September (this month) we offer, to a new subscriber, the American Bee Journal a year and one Standard-Bred Untested Italian Queen—both for only \$1.00. This is a very small price for the old American Bee Journal a whole year and for such a valuable Queen. The Journal alone is 75 cents—Sample Copy FREE. We also offer a Year's Trial Trip to a New Subscriber, for 50c. Better send now for both Journal and Queen at one dollar. Address,

AMERICAN BEE JOURNAL, 146 West Superior Street, CHICAGO, ILL.

Oldest Bee-Paper in America



**W. H. LAWS** has sold more queens in 1909 than any previous season. The reason is obvious; the people know where to get good queens and the right kind of service. In this latitude I can mail queens nearly every month in the year. If you need queens, send right along. I can take care of your orders whether it be one or one hundred. Single queen, \$1.00; six for \$5.00. Breeders, none better, each \$5.00.

**W. H. LAWS,** Beeville, Bee County, Texas.

## "Golden Adel" QUEENS

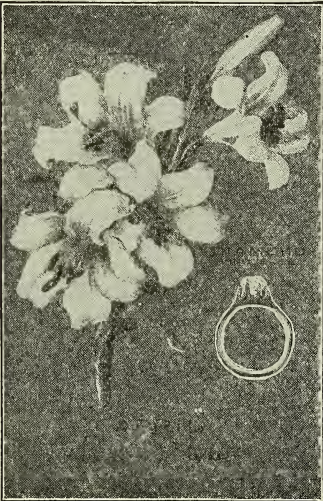
now going by return mail. We have a large number of extra choice queens ready for immediate shipment. We believe they are the best we have ever reared.

Select queens,	- - - -	\$ .85; six, \$4.80
Tested queens,	- - - -	1.00; six, 5.50
Select tested queens,	- - - -	1.50; six, 8.00

This ad. good until close of the season.  
Please note change of address.

**J. R. McCorkle, Lock Box 72, LaFayette, Ind.**

## 10 "Good Luck" Cards FREE



Ten  
Embossed  
Gold  
Silver  
and  
Gray  
Post  
Cards  
with  
French  
Moire  
Back-  
ground  
**FREE**

The illustration gives you but a mere idea of the beauty of only one of these ten cards. They are free for the asking. In brilliant, natural colors with gold, silver and gray background, with a different flower and a different expression of love, esteem and good luck.

I don't sell these cards—I give them away to introduce my big farm magazine to you and your friends. You can secure a free set by mailing me the attached coupon. I only ask you to send 4 cents to help pay postage and packing charges.

### MAIL THIS COUPON QUICK!

**GARRETT WALL, Vice-President,**  
The Farmer's Voice, Dept. 91 Chicago, Ill.

Send me at once the 10 beautiful "Good Luck" cards. Also send me your special offer for getting 200 more cards and a monogram watch free. Enclosed is 4 cents in stamps to help cover postage and packing.

Name \_\_\_\_\_  
Box, Street, or  
R. F. D. No. \_\_\_\_\_  
Town \_\_\_\_\_  
State \_\_\_\_\_

## DOLL SHIPPING CASES

### ARE VERY WELL MADE

Of fine white basswood with one-piece cover and bottom. Can furnish with either corrugated paper or "no-drip sticks."

### DOLL SHIPPING CASES

Are made for any number or size of sections with either 2 or 3 inch glass front. WE HAVE LARGE STOCK ON HAND which means prompt shipment, and our prices are lowest.

### HONEY PACKAGES IN TIN

For shipping or storing extracted honey prevent leakage, and taint from wood; being square they are extra strong, and economize space.

1-gallon cans, 10 in a box.  
5-gallon cans, 1 or 2 in a box.

SEND FOR 1909 ESTIMATE

**MINNESOTA BEE-SUPPLY CO.**

123 Nicollet Island,  
Minneapolis, Minn.

## Better Supplies More Profits

You know to how large an extent the profits of bee culture depend upon the right kind of supplies, and you know, too, that just as important as the right supplies is to get them when you want them, at the right price.

In every way—location, stock, and low prices—we are fitted to serve you to your profit.

### We Ship on Time

and you get the goods when you want them. We are centrally located, and can ship direct by boat and over thirty different railroads. Our stock is the best, and we sell the best goods at the lowest prices. What more can you want? Write today for our big book and special prices for this month.

**Blanke & Hauk Supply Co.**  
1009-13 Lucas Ave. St. Louis, Mo.

## IMPROVE your STOCK

by introducing some of our Famous Long-tongued Italian Red clover Honey-queens. We have been breeders for 23 years, and have developed a strain of bees that some seasons produce nearly 100 lbs. of surplus per colony from red-clover alone.

Untested queens from June to October, 75 cts. each; tested, \$1.25 each; fine breeders, \$10.00 each. Satisfaction guaranteed in every respect.

RED LEININGER & SON, - DELPHOS, OHIO

## Warranted Queens

75 cts.; dozen, \$7.00. Golden strain; gentle; fine workers. Cap and finish up honey equal to any. Plenty of queens ready to mail.

J. B. Case, Port Orange, Fla.

## CHOICE QUEENS

Golden and Red-clover Italians and Gray Carniolans

Select untested, 1, 75 c.; 6, \$4.00; 12, \$7.50

Tested, . . . 1, \$1.00; 6, 5 \$0; 12, \$10 00

Select tested and breeders, . . \$2 to \$4 each

Chas. Koeppen, - Fredericksburg, Va.

## Superior QUEENS!

Carefully reared, leather-colored Italian queens; extra good stock; no disease. Guaranteed to give satisfaction. One, 70c; 6, \$3.75; 12, \$8.50; 20 or more, 50c each, till Nov. 1. S. F. TREGO, Swedona, Ills.

# QUEENS!

And nothing but Italians. An improved superior strain is what QUIRIN-THE-QUEEN-BREEDER raises. Stock is Northern-bred and hardy. We winter our five yards on summer stands with practically no loss. Some of the largest honey-producers of the West started with our stock. Free circular and testimonials.

Prices of Queens after July 1	1	6	12
Select queens . . . . .	\$ .75	\$4.00	\$7.00
Tested queens . . . . .	1.00	5.00	9.00
Select tested queens . . . .	1.50	8.00	15.00
Breeders . . . . .	3.00	15.00	
Golden five-band breeders .	5.00		
Two-comb nuclei, no queen	2.25	12.00	22.00
Three-comb nucl., no queen	3.25	18.00	32.00
Full colonies on 8 frames .	5.00	25.00	

Will soon unite our nuclei for winter, so hurry in your orders.

QUEENS NOW GO BY RETURN MAIL.

Safe arrival and pure mating guaranteed. We employ 400 to 500 swarms. No order too large, and none too small. Over twenty years a queen-breeder.

Address all Orders to

Quirin - the - Queen - Breeder  
Bellevue, Ohio

## SUPERIOR QUEENS BY RETURN MAIL

QUEENS from the famous Red Clover stock, originated by me. Handsome three-banded Italians. If there is honey to be had they will gather it. Something better than the ordinary, at the same price you would pay for common stock. No poor or indifferent queens are sent out at any price. I have devoted myself to queen-rearing for so long, that I know every requirement of the business, and you may be sure that my stock is the best in every particular. My bees are gentle as well as handsome. Queens sent out now will begin to lay immediately, and will stock up your hives with vigorous young bees for winter. Now is the time to buy and have something extra fine to begin next season. My bees are exceptionally hardy, and will winter well if given ordinary attention. Untested, \$1; select untested, \$1.25. While present stock lasts will make the following discounts for quantities: 5 per cent for 6, 10 per cent for 12, 20 per cent for 24, 25 per cent for 50.

### A FEW COMMENTS FROM CUSTOMERS:

*Friend Wardell:*—The queen received. She is a beauty; her escorts all living, and fine as silk.

Fraternalty yours,

F. DANZENBAKER.

Norfolk, Va., April 14, 1909.

MR. F. J. WARDELL, Uhrichsville, Ohio.

*Dear Sir:*—I have been wanting to tell you something for some time. You remember I got a queen bee of you late last fall. Well, when I got her she had not much chance to show her blood; but I

tell you, sir, that she is a dandy, and I would not take any money for her. I placed her in a ten-frame hive, and she was the first one to show up; the prettiest little yellow Italians you ever saw.

Box 222.

Yours truly,

JACOB HECK.

Gnadenhutten, O., June, 1909.

550 W. Walnut St., Lancaster, Pa.  
MR. F. J. WARDELL, Uhrichsville, Ohio.

*Dear Sir:*—Enclosed you will

find \$1.50 in P. O. money order, for which send me at your earliest convenience a select untested queen. I received a queen from you last year and am well pleased with her. I like their gentle nature. Should this one be her equal I will have nothing but the Wardell brand.

Very respectfully,

J. H. SEITZ.

Prof. Math. Boys' High School, Lancaster, Pa.

May 25, 1909.

Send now and get some of this fine stock before it is too late. You can't help being pleased with it

**F. J. WARDELL, Uhrichsville, Ohio**



# FALCON QUEENS

WE HAVE in charge of our Queen Department Mr. Leslie Martin, who has had wide experience in the queen business, having been the queen-breeder in the apiary of the U. S. Department of Agriculture, Washington, D. C., for several seasons, as well as privately conducting the Birdcroft Apiaries in Tennessee since that time. His queens have become famous, and it is with pleasure we offer his services to our customers in the management of this department.

Our "Falcon" Queens are unexcelled in honey-gathering qualities; they winter well, and are gentle. They cap their sections snow-white, and breed early in spring.

Our Mr. Martin is particularly an authority on Caucasians, as he bred much of the stock sent out by the U. S. Department of Agriculture which other breeders are using.

Get our Improved "Falcon" Queens, and increase your honey yields.

## Price List of "Falcon" Queens

### Three-band and Golden Italians, Caucasians, and Carniolans

BEFORE JULY 1			AFTER JULY 1		
Untested.....	One, \$1.00; six, \$5.50; 12, \$10.00.		One, \$ .75; six, \$4.25; 12, \$ 8.00		
Select Untested.....	One, 1.25; six, 6.75; 12, 12.75.		One, 1.00; six, 5.50; 12, 10.00		
	Tested, \$1.50 each		Select Tested, \$2.00 each		

All queens are reared in strong vigorous colonies, and mated from populous nuclei. Instructions for introducing are to be found on reverse side of the cage-cover. Safe arrival and satisfaction guaranteed.



## Falcon Square Jars

Honey can not be put up in more attractive packages for exhibition purposes or the grocery trade than in glass, and for this purpose the square honey-jar is best and most convenient, besides economizing space. Prices:

5-oz. with cork stoppers.....	{ \$2.25 per crate of 100
	{ \$1.25 per crate of 50
8-oz. with spring top.....	{ \$3.75 per crate of 100
	{ \$2.00 per crate of 50
1-lb. with spring top.....	{ \$4.75 per crate of 100
	{ \$2.50 per crate of 50

The glass top with spring attachment is the only absolutely safe method of bottling honey, as corks and screw-caps will leak. Still, we furnish the 1-lb. and the 8-oz. jars with corks, for those who desire them, at 75 cts. per 100 less and 40 cts. per 50 less than with the spring top. We do not sell less than crate lots.

## W. T. Falconer Manufacturing Co.

Jamestown, New York, U. S. A.

# FIVE HUNDRED QUEENS

**Our Queens were  
never better than  
they are now. . . .**

**We have** queens of every grade bred in our yards here, that we can send out by return mail.

**We Guarantee** our queens to be equal to any stock bred, and better than the average.

**You Can't Expect** to get large crops of honey if you have inferior stock in your yards.

**It Doesn't Pay** to leave old and common queens in the hives.

**Requeen Now.** We can furnish the best stock at this season of the year at such reasonable prices no one need hesitate to get the queens he needs.

**The First Cost** is really a secondary consideration now.

**Quality** is the first consideration, and we know you can not be better pleased than to send your order to us. We guarantee safe arrival anywhere in the United States.

**Our Prices:** Untested, \$1.00; select untested, \$1.25; tested, \$2.00; select tested, \$3.00; breeders, \$3.50; select breeders, \$7.50; extra select breeders, \$10.00.

**Quantity Orders.** We take special care of orders for queens in lots of fifty or more. Give plain mailing instructions, telling whether you want them all one day or at intervals, and we will get them to you just when you want them. We make special prices in quantity lots.

**Write Us Today** and get some of the best queens obtainable at reasonable rates, and be sure of getting a large honey crop. Our bees will gather honey if there is any to be had.

**The A. I. Root Co.**  
Medina, Ohio

## Special Notices by A. I. Root.

FLORIDA REAL-ESTATE OFFERS, ETC.; LOOK OUT FOR "LAND-SHARKS."

No matter how tempting the offer, nor what may be the circumstances represented, do not purchase land in Florida, either acres, lots, or any thing of the sort, without visiting the locality and inspecting it. If you invest first and look it up afterward you may find you have purchased land at thirty or forty dollars an acre that might have been bought for five or six dollars (or less) had you been on the spot.

### HOW TO DESTROY RATS.

The above is the title of another bulletin in regard to the rat nuisance. On page 418, July 1, I wrote up the former bulletin, and announced that rats are costing the people of this country about a *hundred million dollars* annually. It seems there was such a demand for the former bulletin that the edition was soon exhausted, and another one has just been sent out, issued the 3d of this month. It contains pictures of the little trap I recommended, and a number of suggestions in regard to their use. There are 20 pages, and I wish the bulletin might be put into every home in the land where rats and mice have ever made any trouble. We have already sold a gross of the little mouse-traps (two for a nickel), and another gross is ordered and on the way. If you can not get these traps near home, remember we can send you two of them by mail, post-paid, for 7 cts., or a whole dozen for 41 cts. Now, please turn in and help, in ridding not only your own premises, but the whole United States, and, better still, the *whole wide world*, of the shame and disgrace that rest on every one of us when we permit these pests not only to annoy us, but to bring, indirectly, *death* and *pestilence* in our midst.

### "FARM MANAGEMENT IN NORTHERN POTATO-GROWING SECTIONS."

The above is the title of another exceedingly valuable bulletin. It contains 31 pages, and should be in the hands of every potato-grower in the nation, no matter if you grow only enough for your own use. I wish to speak of only one special point. I have told you what they are doing in the way of improved corn culture. Now, something similar can be done with potatoes, for I have proved it. Select your potatoes for planting next year in the field at the time of digging. Take only the best tubers from the best-yielding and healthiest hills. This bulletin tells us that a man in Michigan commenced doing this some years ago. The first year he found that only 8 per cent of the hills were up to the standard he had decided on. The next year 20 per cent of the hills came up to the standard. The third year more yet, and after five years of this method he was able to produce a field where 70 per cent of the hills came up to the requirements in the way of yield, shape, and resistance to drouth, blight, etc. He not only more than doubled his yield, but greatly improved the quality of the whole crop. You can not afford to be without this potato bulletin. The two bulletins I have mentioned are sent free on application to any one of Uncle Sam's children. Just write to the Department of Agriculture, Washington, D. C., and tell them what bulletins you want.

### POULTRY SECRETS.

The poultry-secret business seems to be pretty well done up with the war that GLEANINGS and the agricultural papers have been waging on it. Another book in regard to the matter is now in my hands. It is entitled "Tricks in the Poultry Trade." It was written by Reese V. Hicks, Topeka, Kansas, editor of *Poultry Culture*. Price 25 cents. The book contains 64 pages, and is well worth the price, for it exposes many of the secrets that have been advertised during the last two or three years. As the book is brief, he does not stop even to give credit to the inventors or advertisers of the tricks. And, by the way, he described how to make my paper-box egg-tester, almost word for word as I gave it in GLEANINGS; but he does not even mention A. I. Root. Perhaps I should not complain, as he does not mention anybody. While the book does not tell as much as "Poultry Secrets," by the *Farm Journal* people, it gives enough to be well worth the money. "Tricks of the Poultry Trade" is given free to everybody who sends 50 cents for their periodical, *Poultry Culture*, Topeka, Kansas.

Now we have two good examples before the poultry world for some of the brethren to follow who have been charging a dollar for a single page of printed matter, or say half a dozen pages, for some little secret. We have two fair-sized books concerning a great lot of secrets, for the very reasonable price of 25 cents each.



## Classified Advertisements

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

### Honey and Wax for Sale

FOR SALE.—Comb honey in car lots or less.  
J. E. PRYOR, Plateau City, Colorado.

FOR SALE.—New alfalfa honey, best quality, new cans and cases, 7½c. H. E. CROWTHER, Parma, Idaho.

FOR SALE.—Choice well-ripened alfalfa honey in new cans, \$10 per case. A. S. PARSON, Rocky Ford, Col.

FOR SALE.—Fine quality of well-ripened raspberry-milkweed honey, in new 60-lb. cans (2 in box) at 8c. f. o. b. here. P. W. SOWINSKI, Bellaire, Mich.

FOR SALE.—Choice light-amber and golden honey in 60-lb. cans at 7 to 8 cents. Sample 6 cents, deducted from order. F. B. CAVANAGH, Hebron, Ind.

FOR SALE.—Clover, basswood, and buckwheat comb and extracted honey; well refined. Write for particulars. E. L. LANE, Trumansburg, N. Y.

FOR SALE.—Clover and raspberry honey mixed in new 60-lb. cans. Well ripened and of fine flavor. Sample, 10 cts. Price of sample may be deducted from order. JAMES MCNEILL, Hudson, N. Y.

FOR SALE.—Fancy extracted alfalfa honey, thoroughly ripened, rich and thick. If you want honey that will "taste like more," try a 60-lb. can for \$5.50. A. A. LYONS, Rt. 3, Fort Collins, Col.

FOR SALE.—Fancy and No. 1 section honey in 24-lb. shipping-cases, and the same in 120-lb. cases of extracted and broken comb. Write me for prices. WM. MORRIS, Las Animas, Colorado.

Light extracted honey in 60-lb. cans, 8 cts. per lb.; in barrels, 7 cts.; tupelo, in cans, 8 cts.; barrels, 7½ cts.; white sage, cans, 8½ cts.; 5 cases at 8½ cts. I. J. STRINGHAM, 105 Park Place, New York City.

HONEY FOR SALE by members of the Michigan Beekeepers Association. For free annual booklet giving names and addresses of members address the Secretary, E. B. TYRRELL, 230 Woodland Ave., Detroit, Mich.

FOR SALE.—Choice basswood and buckwheat honey in new kegs holding 155 lbs., at 7 cts. per lb. No honey-dew in this honey, nor bee disease. FRANK C. ALEXANDER, Delanson, N. Y.

FOR SALE.—Extracted honey, clover, basswood, and buckwheat, in 60-lb. cans and 225-lb. kegs; and comb honey and beeswax. Prices on application. W. L. COGGSHALL, Groton, N. Y.

FOR SALE.—Raspberry honey, new crop, left on the hives until thoroughly ripened, thick, rich, delicious, has raspberry flavor, stored in bright, new, round, jacketed 60-pound tin cans, with flat cover and wire bail. Ten cents a pound—\$6.00 for a can. Sample ten cents. W. Z. HUTCHINSON, Flint, Mich.

FOR SALE.—My new crop white-clover and basswood extracted honey, put up in brand-new 60-lb. cans; two cans to a case, at 9½ cts. per lb. by case of 120 lbs., or 10 cts. per lb. for single 60-lb. can, F. O. B. Flint; cash with order. LEONARD S. GRIGGS, 711 Avon St., Flint, Mich.

FOR SALE.—Our crop of clover comb honey in 4 x 5 plain sections; also extracted of the following kinds: Clover, raspberry, basswood, and buckwheat. Not a pound of the above honey was extracted until after the close of the honey-flow. The fact is, there is none better on the market. State which kind you prefer, and the amount you can use, and we will quote you our lowest cash price and mail you a liberal sample. Remember we are specialists, and understand thoroughly the production of extracted honey. E. D. TOWNSEND & SONS, Remus, Mich.

FOR SALE.—Our 1909 crop of fancy extracted honey now being gathered at our Northern Michigan apiaries. It is from alsike clover, raspberry, and willow-herb. Dead-ripe, clear, extremely thick and waxy, and of exquisite flavor. Is in five-gallon 60-lb. cans, two in a box. Price 9 cts. per lb., f. o. b. on G. R. & I. R'y, near Lake City, Mich. I shall have some fine fall honey later from the home yard, extracted from celandine and buckwheat. Sample of the Northern Michigan or white honey ready now, free. None of the amber honey is extracted yet, but will be ready in about two weeks from this date, August 25.

O. H. TOWNSEND, Otsego, Mich.

### Honey and Wax Wanted

WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity. R. A. BURNETT, 199 South Water St., Chicago, Ill.

WANTED.—Five hundred cases fancy white-clover New-York State comb honey; 24 to case. M. H. TWEED & CO., Pittsburgh, Pa.

WANTED.—White honey. State kind, how put up, and lowest cash price. CHAS. KOEPPEN, 1508 Main St., Fredericksburg, Va.

WANTED.—Fancy comb and gilt-edged clover extracted honey. Can furnish shipping-cases and cans cheap in part payment if desired. B. WALKER, Clyde, Ill.

WANTED.—To buy for cash, a quantity of extracted honey. State price, kind, and quantity. Interested in car of alfalfa. A. G. WOODMAN CO., Grand Rapids, Mich.

### Wants and Exchanges

WANTED.—Refuse from the wax-extractor, or slum-gum. State quantity and price. OREL L. HERSHISER, 301 Huntington Ave., Buffalo, N. Y.

WANTED.—To buy a good bee location and an apiary with accessories; fine climate essential. Write full particulars to J. A. HEBERLY, West River, Md.

### Real Estate

FOR SALE.—Dairy, truck, and poultry farm. Write for particulars. A. BEYER, box 223, Lake Charles, La.

FOR SALE OR RENT.—My home, apiaries, and land on Indian River, Fla. L. K. SMITH, Grant, Fla.

FOR SALE.—Ten acres, well improved, near town; fruit, poultry, bees; health resort. Address Box 344, Mena, Ark.

FOR SALE.—On account of age—my home, 2½ lots—bee-house, holding 48 hives with fixtures for same, and 12 colonies of bees; honey-house and 3-roomed poultry-house; both plastered; abundance of fruit. JANE M. KELLEY, Holloway, Mich.

FOR SALE.—82 acres in the best cultivation, and fruit, two miles from Caldwell. I will sell the same in ten-acre tracts on easy terms; splendid for poultry and bees. Also one nine-room house and large barn and block half a mile from postoffice. For particulars address OTTO GEISE, Caldwell, Idaho.

### Help Wanted

WANTED.—A hustling helper in the bee and honey business—preferably one who has cash to invest in securing an interest in one that is established and profitable. B. WALKER, Clyde (Chicago suburb), Ill.

## Bees and Queens

FOR SALE.—Mismatched Italian queens, 25 cts. each; 5. \$1.00. J. F. MICHAEL, Winchester, Ind.

FOR SALE.—Italian queens; untested, 50 cts.; select, 75 cts.; tested, \$1.00. ROBT. B. SPICER, Wharton, N. J.

FOR SALE.—Golden-all-over queens, and bee-keepers' supplies. T. L. McMURRAY, Silverton, W. Va.

Mismatched queens for 25 cts.; hybrids, 15 cts. C. G. FENN, Washington, Ct.

FOR SALE.—An apiary of 222 colonies with complete outfit for running the same. Good location. J. W. KALFUS, Surrey, Cal.

Extra-fine queens of the red-clover strain, bred by the originator. Fine queens for breeders' use, a specialty. F. J. WARDELL, Uhrichsville, Ohio.

FOR SALE.—100 colonies of bees; also empty hives, supers, and all fixtures for running a first-class apiary. W. P. TURNER, Peoria Heights, Ill.

FOR SALE.—Hardy goldens and Adel queens; Italians; fine honey-gatherers. Virgins, 40 cts.; untested, 75 cts.; tested, \$1.50. EDWA. REDDOUT, Baldwinsville, N. Y.

FOR SALE.—Northern-bred red-clover queens. Untested, 75 cents; tested, \$1.00. E. S. WATSON, Madison, Maine. R. F. D. No. 2.

FOR SALE.—275 colonies of nearly pure Italian bees in dovetailed hives. Bees are situated in sweet-clover belt of Alabama. M. C. BERRY, Morganville, Ala.

FOR SALE.—200 colonies of bees in eight-frame hives in good location, eight miles from Denver, in Bear Creek Valley, all equipped for comb or extracted honey. N. N. ATCHLEY, Mt. Morrison, Col.

5000 three-band Italian queens ready to mail March 1. Untested, 75 cts.; tested, \$1.00; breeders, \$5.00. Ask for prices in large quantities. W. J. LITTLEFIELD, Route 3. Little Rock, Ark.

FOR SALE.—1000 colonies of bees with fixtures; run principally for extracted honey. DR. GEO. D. MITCHELL & Co., 340 Fourth Street, Ogden, Utah.

FOR SALE.—Italian queens, clover stock or three-banded, untested, 50 cents, 3 for \$1.25; tested, 60 cents. I also offer 140 colonies of bees for sale in two different places. W. SIMPSON, Meyer, Ill.

Missouri-bred Italian queens by return mail. Select untested, 75 cts.; tested, \$1.00; breeders, \$3.00; virgins, 40 cts.; dozen lots 20 per cent discount. L. E. ALTWEIN, St. Joseph, Mo.

FOR SALE.—175 swarms of bees at a bargain if taken soon; 8 and 10 frame 2-story hives with Hoffman frames, built from wired foundation. If interested call on or write. W. H. RAILS, Orange, California.

Two hundred and twenty-five lbs. comb honey gathered by one colony of our bees. Don't fail to try some of our wonderful honey-gatherers; average queen, 65 cents; selected, 75 cents; tested, \$1.00; select tested, \$1.25. G. ROUTZAHN, Biglerville, Pa.

FOR SALE.—Moore's strain and golden Italian queens, untested, \$1.00; six, \$5.00; twelve, \$9.00. Carniolan, Banat, and Caucasian queens, select, \$1.25; six, \$6.00; twelve, \$10.00. Tested, any kind, \$1.50; six, \$8.00. Choice breeders, \$3.00. Circular free.

W. H. RAILS, Orange, Cal.

## Poultry

A. I. Root's Bee-goods, Poultry-supplies, Seeds, etc. STAPLER'S, 412-414 Ferry St., Pittsburgh, Pa.

R. C. Brown Leghorns; cockerels, \$1 and \$2 each. Unt. Italian queens by return mail, 60 cts.; tested, 75 cts.; select tested, \$1. Fine ext. honey, 8 cts. per lb. GEO. J. FRIESS, Hudson, Mich.

## For Sale

FOR SALE.—Bee-supplies at factory prices. D. COOLEY, Kendall, Mich.

FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Write for catalog and particulars. THE PENN CO., successors to W. P. Smith, Penn, Miss.

FOR SALE.—Unhulled sweet-clover seed, just gathered; 8 cts. per lb. f. o. b. cars here; small lots, less than 4 lbs., by mail, 12 cts. per lb., postpaid. WM. CRAIG, P. M., Luce, Mich.

## Bee-keepers' Directory

FOR SALE.—Bees, queens, and honey. Write to A. H. KANAGY, Kishacoquillas, Pa.

Bee-keepers' Supply Co., Lincoln, Neb. We buy car lots of Root's goods. Save freight. Write.

ITALIAN BEES, queens, honey, and Root's bee-keepers' supplies. ALISO APIARY, El Toro, Cal.

Well-bred bees and queens. Hives and supplies. J. H. M. COOK, 70 Cortlandt St., New York City.

For bee-smoker and honey-knife circular send card to T. F. BINGHAM, Farwell, Mich.

Golden yellow Italian queens my specialty; 1909 price list ready. Safe introducing directions. E. E. LAWRENCE, Doniphan, Mo.

Golden and red-clover Italian queens. See my other advt in this issue. WM. A. SHUEFF, 4426 Osage Ave., Philadelphia.

Italian queens from direct imported mothers, red-clover strain, \$1.00. Circular. A. W. YATES, 3 Chapman St., Hartford, Conn.

FOR SALE.—High-grade red-clover and Golden queens. Safe arrival and satisfaction guaranteed. One, 75 cts.; six, \$4.00; dozen, \$7.50. SIRES BROS. & Co., North Yakima, Wash.

QUEENS.—Improved red-clover Italians, bred for business—June 1 to Nov. 15, untested queens, 60 cts.; select, 75 cts.; tested, \$1.00 each. Safe arrival and satisfaction guaranteed. H. C. CLEMONS, Boyd, Ky.

Quirin's famous improved Italian queens ready in April; nuclei and colonies about May 1. My stock is northern bred, and hardy. Five yards wintered on summer stands without a single loss in 1908; 22 years a breeder. For prices see large ad. in this issue. QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

## Convention Notices.

The annual meeting of the Western Illinois Bee-keepers' Association will be held in the county court-room, at Galesburg, Ill., Oct. 13. All interested in bee-keeping are invited. F. B. HAZLETT, Sec'y, Galesburg, Ill.

The annual meeting of the Northern Illinois and Southern Wisconsin Bee-keepers' Association will be held in the court-house in Freeport, Illinois, on Tuesday, Oct. 19, 1909. All are cordially invited. B. KENNEDY, Sec., Cherry Valley, Ill.

## NATIONAL CONVENTION.

The next annual meeting of the National Bee-keepers' Association will be held at Sioux City, Ia., Sept. 22, 23. Car fare of 1½ round trip for 200 miles each way. Board and meals cared for by Sioux City Y. M. C. A. Lodgings not over 50 cts., and meals from 10 cts. up as ordered. Platteville, Wis. N. E. FRANCE.



### Advance in Prices of Hives, etc.

It is six years or more since we made the last advance in price of hives, sections, and other wooden goods, with a few exceptions. During this time the general trend of prices of a great many commodities has been gradually upward. During the business depression of the last two years some of the lower grades of lumber were reduced in price; but the better grades, especially of white pine and basswood, the material which we use, has held right up, and in some cases are higher. General business conditions are already greatly improved, and lumber and other materials are advancing. The cost of living has increased, and the rate of wages as well. The farmers, as a rule, have abundant crops, and are getting excellent prices for their products. While the bee-keepers have not generally had as favorable a season as last year, the margin on hives and sections at old prices has become so much reduced because of increasing cost that we feel obliged to make an advance. Some of the revised prices are given this issue. A correction sheet, giving new prices, will be mailed on application.

#### EARLY-ORDER DISCOUNTS.

On all orders accompanied by cash received during the month of September, and subject to conditions named below, we allow 7 per cent discount; October cash orders, 6 per cent discount; November, 5 per cent; December, 4 per cent; January, 3 per cent; February, 2 per cent; March, 1 per cent.

This discount will apply on all articles listed in our regular catalog at current corrected prices to date except as follows: Tinned wire, paint, Bingham smokers, Porter bee-escapes, glass and tin honey-packages, scales, bees and queens, bee-books, papers, labels, printed matter, bushel boxes, seeds, and specialties not listed in our general catalog. Where any or all of these articles in a general order do not exceed fifteen per cent of the whole order the discount may be deducted from the whole order, including these items otherwise excepted.

#### Price List of One-story Dovetailed Hives; No Super or Upper Story Included.

The one-story Dovetailed hive includes a cover, bottom, and brood-chamber, with frames, div.-board, and nails. Furnished in either eight or ten frame size. Any style of super or upper story may be used on this hive.	Designating Letters and Number for 8 and 10 frame	Nailed and Painted Each	In Flat		
			1 Hive	5 Hives	Weight of 5
1-story Dov'd hive, no super or upper story, with frames and division-board, no foundation starters .....	AE5-8	\$ 2 05	\$ 1 53	\$ 7 00	100
	AE5-10	2 15	1 60	7 50	108
1-story Dov'd hive with frames and division-board, with 1-inch foundation starters, no super or upper story ..	AE6-8	2 15	1 60	7 25	100
	AE6-10	2 25	1 70	7 75	108
1-story Dov'd hive with frames and division-board, with full sheets foundation, no super or upper story .....	AE7-8	3 00	2 10	10 00	100
	AE7-10	3 30	2 35	11 25	108

#### Price List of Dovetailed Hives Taking 4¼x4¼x1½ Beeway Sections.

The one and one-half-story hive includes a cover, bottom, brood-chamber, and one super with inside fixtures. The two story hive includes the same with one extra super. Each hive is furnished in either eight or ten frame size.	Designating Letters and Number for 8 and 10 frame	Nailed and Painted Each	In Flat		
			1 Hive	5 Hives	Weight of 5
1½-story hive for comb honey in 4¼x4¼x1½ beeway sections, without sections or foundation starters .....	AE52S-8	\$ 2 75	\$2 05	\$ 9 50	135
	AE52S-10	2 90	2 20	10 25	145
1½-story hive for comb honey in 4¼x4¼x1½ beeway sections, including sections and 1-inch foundation starters ..	AE64S-8	3 15	2 35	10 75	140
	AE64S-10	3 30	2 50	11 50	152
1½-story hive for comb honey in 4¼x4¼x1½ beeway sections including sections and full sheets foundation .....	AE71S-8	4 40	3 10	14 50	140
	AE71S-10	4 80	3 45	16 25	152
2-story hive for comb honey in 4¼x4¼x1½ beeway sections, without sections or foundation starters .....	AE522S-8	3 45	2 60	12 00	170
	AE522S-10	3 65	2 80	13 00	182
2-story hive for comb honey in 4¼x4¼x1½ beeway sections, including sections and 1-inch foundation starters .....	AE644S-8	4 15	3 10	14 25	180
	AE644S-10	4 35	3 30	15 25	197
2-story hive for comb honey in 4¼x4¼x1½ beeway sections, including sections and full sheets foundation .....	AE711S-8	5 65	4 05	18 50	180
	AE711S-10	6 05	4 40	20 25	197

#### Price List of Brood-chambers for Hives, L. Size, Danzenbaker and Jumbo.

Hive-bodies or brood-chambers are furnished empty or with frames and followers or with inch fdn. starters or full sheets, either 8 or 10 frame size except the Danz. No cover or bottom included at these prices.	Designating Letters and Number for 8 and 10 frame	Nailed and Painted Each	In Flat		
			1 Body	5 Bodies	Weight of 5
Empty body including nails and tin rabbets, no inside fixtures, regular L. size, 9½ inches deep .....	Empty { -8	\$ 65	\$ 50	\$ 2 25	40
	Body { -10	68	53	2 35	43
Body with Hoffman frames and division-board, no foundation, regular L. size .....	{ 5-8	1 15	90	4 25	60
	{ 5-10	1 20	95	4 50	65
Body with Hoffman frames and division-board, with 1-inch foundation starters, regular L. size .....	{ 6-8	1 25	1 00	4 50	60
	{ 6-10	1 30	1 05	4 75	65
Body with Hoffman frames and division-board with full sheets foundation, regular L. size .....	{ 7-8	2 10	1 50	7 25	62
	{ 7-10	2 35	1 70	8 25	67
Danzenbaker body with hanger cleats, no frames .....	Danz. Body	65	50	2 25	40
Danz. body with frames, follower, hanger-cleats, wedges ..	D5	1 15	90	4 25	60
Danz. body with frames, follower, inch foundation starters ..	D6	1 25	1 00	4 50	60
Danz. body with frames, follower, full sheets foundation ..	D7	2 10	1 50	7 25	62
Jumbo body empty, 11½ inches deep, including nails and tin rabbets, no frames .....	Jumbo { -8	72	57	2 60	50
	Body { -10	75	60	2 75	55
Jumbo body with frames (11¼) and division-board, no foundation starters .....	{ J5-8	1 25	1 00	4 75	70
	{ J5-10	1 30	1 05	5 00	80
Jumbo body with frames (11¼) and division-board with inch foundation starters .....	{ J6-8	1 35	1 10	5 00	70
	{ J6-10	1 40	1 15	5 25	80
Jumbo body with frames (11¼) and division-board with full sheets foundation .....	{ J7-8	2 35	1 80	8 75	75
	{ J7-10	2 65	2 10	10 25	85

#### Price List of Dovetailed Supers Taking 4¼x4¼x1½ Beeway Sections.

The slotted-section super is 4¼ inches deep and includes nails, flat tins, slotted section-holders, slotted separators, followers, and springs. Furnished in either eight-frame or ten-frame size.	Designating Letters and Number for 8 and 10 frame	Nailed and Painted Each	In Flat		
			1 Super	5 Supers	Weight of 5
Shallow super for comb honey in 4¼x4¼x1½ beeway sections, no sections or foundation starters .....	{ 2S-8	\$ 70	\$ 55	\$ 2 50	30
	{ 2S-10	75	60	2 75	35
Shallow super for comb honey in 4¼x4¼x1½ beeway sections, including sections and 1-inch foundation starters ..	{ 4S-8	1 00	75	3 50	35
	{ 4S-10	1 05	80	3 75	40
Shallow super for comb honey in 4¼x4¼x1½ beeway sections, including sections and full sheets foundation .....	{ 1S-8	1 40	1 00	4 50	40
	{ 1S-10	1 50	1 10	5 00	45

## Price List of Dovetailed Supers for Extracted Honey or Sectional Brood-chamber.

The super (5½ inches deep) is furnished empty or with shallow 5½-inch frames and follower or including foundation starters or full sheets of foundation. Furnished in either eight-frame or ten-frame size.	Designating Letters and Number for 8 and 10 frame	Nailed and Painted Each	In Flat		
			1 Super	5 Super	Weight of 5
Empty deep super 5½ inches deep with nails, no other inside fixtures .....	Shallow { 8 Super { -10	\$ 40 42	\$ 27 28	\$ 1 25 1 35	22 24
Extracting-super (5½ inches deep) including shallow (5½-inch) Hoffman frames and follower, no foundation.....	{ 9-8 8-10	70 75	55 60	2 50 2 75	35 40
Extracting-super (5½ inches deep) including shallow (5½-inch) Hoffman frames and follower, 1-in. fdn. starters	{ 9-8 9-10	80 85	60 65	2 75 3 00	35 40
Extracting-super (5½ inches deep) including shallow (5½-inch) frames and follower with full sheets foundation	{ 0-8 0-10	1 35 1 45	90 1 00	4 25 4 75	38 43

The same super fitted with shallow Danzenbaker frames would cost 5 cents each more, and would be designated the same with D just preceding the first figure.

## Price List of Danzenbaker Supers Taking 4x5x1½ Plain Sections.

Danzenbaker super for comb honey includes hanger-cleats, end-stops, Danzenbaker section-holders, M fences, and springs. Made in ten-frame (16½ inches), nine-frame (14½ inches), regular eight-frame (13½ inches) width.	Designating Letters and Number for 8 and 10 frame	Nailed and Painted Each	In Flat		
			1 Super	5 Supers	Weight of 5
Danzenbaker super for comb honey in 4x5x1½ plain sections, no sections or foundation starters .....	{ 2M-8 2M-10	\$ 85 90	\$ 70 75	\$ 3 25 3 50	45 50
Danzenbaker super for comb honey in 4x5x1½ plain sections, including sections and 1-inch foundation starters	{ 4M-8 4M-10	1 15 1 20	90 95	4 25 4 50	55 60
Danzenbaker super for comb honey in 4x5x1½ plain sections, including sections and full sheets foundation	{ 1M-8 1M-10	1 60 1 70	1 15 1 25	5 25 5 50	55 60

Excelsior cover, 8-frame—E-8. .... Nailed and painted, \$0.50 ea. In flat, \$0.35; five, \$1.65. Wt. of 5, 25 lbs.  
10-frame—E-10. .... .53 .38 1.80. 28

The following price includes a super-cover. Deduct 10 cts. each for this if not wanted.

Telescope Excelsior cover, 8-frame, ExC-8. Nailed and Painted \$0.70. In flat, \$0.55; five, \$2.60. Weight of 5, 29 lbs.  
10- ExC-10 .73 .58; 2.75. 32

Gable cover, 8-frame—G-8. .... Nailed and painted, \$0.50 ea. In flat, \$0.35; five, \$1.65. Wt. of 5, 26 lbs.  
10-frame—G-10. .... .53 .38 1.80. 30

When super-cover is not included, the price of same as quoted below may be deduct d.

Metal-roofed cover, with super cover, 8-fr.—RC-8. Nailed and painted, \$0.65. In flat, \$0.50; 5, \$2.35. Wt. of 5, 23 lbs.  
10-fr.—RC-10 .68 .53; 5, 2.50 25

Prices of covers separately with super-cover:

Telescope cap, 8-frame—KC-8. .... Nailed and painted, \$1.10 ea. In flat, \$0.80; five, \$3.85. Wt. of 5, 43 lbs.  
10-frame—KC-10 .113 .83 4.00 46

Double flat cover, 8-frame—F-8. .... Nailed and painted, \$0.50 ea. In flat, \$0.35; five, \$1.65. Wt. of 5, 25 lbs.  
10-frame—F-10. .... .53 .38 1.80 27

Danzenbaker bottom, 8-frame—A-8. .... Nailed and painted, \$0.40 ea. In flat, \$0.25; five, \$1.15. Wt. of 5, 25 lbs.  
10-frame—A-10. .... .42 .27 1.25 27

Danz. bottom with Cary feeder, 8-frame A-8Cary. N. and P.. \$0.50 each. In flat, \$0.35. Five, \$1.65. Wt. 5, 25 lbs.  
10- A-10 .52 .37. 1.75. 27

Combined bottom-board and hive-stand, 8-frame, designated C-8, nailed and painted, 50c; in flat, 35c; 5 for \$1.65  
10-frame C-10 58c; in flat, 38c; 5 for \$1.80

Hive-stand for single hive, designated H, either 8 or 10 frame hive, nailed and painted, 25c; in flat, 17c; 5 for \$1.50  
Dual hive-stand, designated U. .... nailed and painted, 50c; in flat, 34c each; 5 for \$1.50

Frames.	Outside Measure	—Nailed—per 100—			Weight of 100
		Empty.	With fdn. starters	With full sheets.	
Nails included with all frames in flat.					
Hoffman frames .....	9½x17½	\$4.00	\$5.00	\$14.50	.35 \$3.00 50 lbs.
Metal-spaced frames .....	9½x17½	5.00	8.00	15.50	.40 3.50 52 lbs.
Thick-top staple-spaced frames .....	9½x17½	4.00	5.00	14.50	.35 2.90 50 lbs.
All-wood frames, ¾-inch top-bar .....	9½x17½	3.00	4.00	13.50	.28 2.30 25 lbs.
All-wood frames, ½-inch top-bar .....	9½x17½	3.20	4.20	14.00	.30 2.50 30 lbs.
Shallow extracting-frames .....	5½x17½	3.00	4.00	9.50	.28 2.30 20 lbs.
Danz. brood-frames .....	7½x17	4.00	5.00	13.00	.32 2.80 35 lbs.
Danz. extracting-frames .....	5½x17	3.50	4.50	10.00	.30 2.70 30 lbs.

Frames pierced and wire included, 10 cts. per 100 extra in flat; 50 cents extra put up. Frames 11¼ inches deep of three first styles listed above for Jumbo hives, 30 cts. per 100 extra, without foundation.

## Tinned Wire.

	Price each, 3c; postage each, 2c
¾-oz. spools, No. 30 tinned wire .....	12c
¼-lb. spools No. 30 tinned wire .....	18c
1-lb. spools No. 30 tinned wire .....	30c
5-lb. coils No. 30 tinned wire .....	\$1.10

## Price List of Sections.

4¼x1¼ BEEWAY SECTIONS.				PLAIN, OR NO-BEEWAY SECTIONS.			
2 in., 1½, 1¾, or 7 to ft. wide.				We send 4¼x1½ plain, or what will fit other items in your order, if you do not specify.			
No.	A	B	Weight.	No.	A	B	Weight.
100	\$ 80	\$ 70	7 lbs.	100	\$ 80	\$ 70	6 lbs.
250	1 60	1 40	18 "	250	1 60	1 40	15 "
500	2 75	2 50	35 "	500	2 75	2 50	30 "
1000	5 50	5 00	70 "	1000	5 25	4 75	60 "



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Before selling your season's wax, or let us send you our prices for working your beeswax into

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We can use almost an unlimited quantity of beeswax, and we are buying all the time.

During the season of 1909 we handled over 150,000 pounds of beeswax.

If your honey supply is short we can supply you with white or amber honey. Send for prices at once.

**Dadant & Sons, Hamilton, Illinois**

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PHILADELPHIA is the logical business center for Eastern Pennsylvania, New Jersey, and Delaware. In addition, it has superior facilities for reaching points in the South along the Atlantic seaboard. We can ship to all such points promptly and at very low rates owing to the competition of the steamships. We have a large stock constantly on hand, and can fill the largest orders at ONCE. When you are in our city, come and see us. . .

**The A. I. Root Company, Philadelphia, Penn.**

Wm. A. Selser, Manager

10 Vine Street

BEE-KEEPERS OF THE WEST

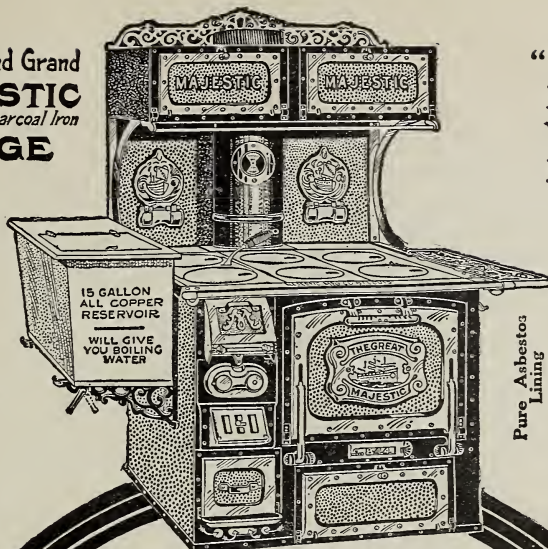
BEE-KEEPERS OF THE EAST

The Great and Grand  
**MAJESTIC**  
*Malleable and Charcoal Iron*  
**RANGE**

With water  
fronts if  
wanted for  
pressure  
or other  
boilers

**PERFECT  
BAKER**

**FUEL  
SAVER**



"The  
Range  
With a  
Reputation"

Body  
made of  
Charcoal  
Iron,  
adding  
300%  
to life of  
Range

Pure Asbestos  
Lining

**There's Only One Best**

—that's the Great MAJESTIC—it's so easy to make claims—but here's the proof—**Majestic Ranges outlast three** of any other make, because they're the only ranges made exclusively of **Malleable and Charcoal Iron** and they just **can't** break, crack or rust. Then, the air-tight joints and pure asbestos lining cuts your fuel bill in half and gives you a perfect baker every day in the year.

The MAJESTIC has a 15-gallon, all copper, moveable reservoir which heats water in a jiffy. No springs in the oven door—when dropped it forms a rigid shelf bearing any weight—oven rack slides out automatically, holding anything secure that happens to be on it. Another feature of

The Great and Grand  
**MAJESTIC**  
*Malleable and Charcoal Iron*  
**RANGE**

is the open end ash pan which acts as a shovel and a small ash cup under the ash pan—no muss or danger of fire about a MAJESTIC. Each exclusive MAJESTIC feature makes this range more practical, more serviceable, more durable—the best range your money can buy regardless of price.

MAJESTIC Ranges are sold in nearly every county in forty states. If your dealer doesn't carry MAJESTIC Ranges, write us for the name of a dealer in your locality who does, and we'll send our booklet:

"THE STORY OF MAJESTIC GLORY"

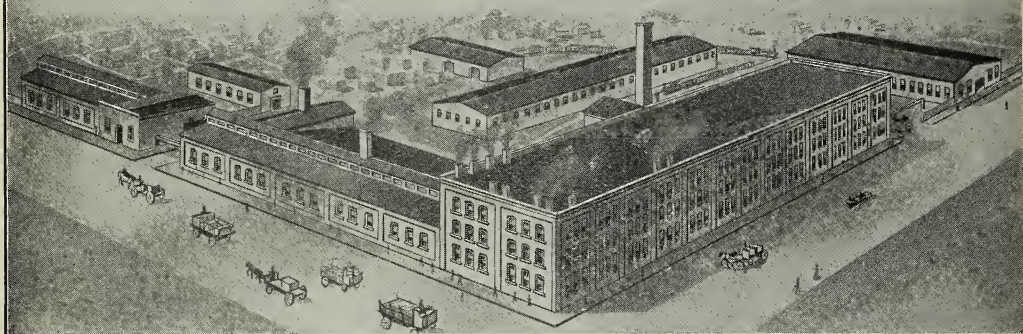
MAJESTIC MFG. CO.  
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It  
Should  
Be in  
Your  
Kitchen

Out  
Lasts  
Three  
Ordinary  
Ranger



# Here Is Proof Absolute



The buildings of the Lehr Agricultural Company, Fremont, Ohio, were among the first buildings, anywhere, to be roofed with a ready roofing. They were roofed with Ruberoid—the first ready roofing ever invented. That was seventeen years ago. This is the longest test ever given a ready-to-lay roofing. There is no theory, no uncertainty, in such a test as this. And today, this roof, put on in 1892, looks good for many years more.

Don't expect any ordinary roofing to stand such a test as this.

Many roofings *look* like Ruberoid. Don't let that fact deceive you.

No other maker can use Ruberoid gum—and it is the use of this flexible gum which makes Ruberoid waterproof—sun proof—cold proof—weather proof—resisting acids, gases and fumes.

It is the exclusive use of Ruberoid gum that makes Ruberoid roofing so good a fire resistant that if you drop *live coals* on the roof it will not take fire.

## A One-Piece Roofing

Ruberoid roofing is sold by dealers everywhere. In each roll is Ruberine cement for joining the seams and laps.

A roof of Ruberoid is practically *one piece*, flexible, durable, attractive.

It also comes in attractive colors—Red, Green, Brown—suitable for the finest homes.

These color roofings are made under our exclusively owned U. S. and foreign patents. The colors do not wear off

or fade, because they are *part* of the roofing.

You can lay a Ruberoid roof yourself. Everything you need comes with the roll.

Or, if you have it laid, the cost of laying is the lowest of any roofing—of any kind.

Don't decide on *any* roofing for *any* purpose until you have read our free book.

## Get This Free Book

This book tells all that we know about various roofings—all that we have learned in twenty years of experiment about tin, tar, iron, shingle and other roofings.

It gives you a good idea of the advantages and the disadvantages of each. It tells the first cost, the upkeep cost—how long each kind of roof will last—what repairs will probably be needed.

The book is fair, frank and impartial. It is a gold-mine of roofing information. Because it tells about Ruberoid roofing, too, we do not charge for it—we send it free.

To get this free book, address Department 34G The Standard Paint Company, 100 William Street, New York.

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